

Alan J. Nussbaum
Head and Horn in Indo-European

Untersuchungen zur Indogermanischen
Sprach- und Kulturwissenschaft

Studies in Indo-European Language
and Culture

Neue Folge / New Series

herausgegeben von

Roberto Gusmani, Anna Morpurgo-Davies
Klaus Strunk, Calvert Watkins

2



Walter de Gruyter · Berlin · New York

1986

Alan J. Nussbaum

Head and Horn in Indo-European



Walter de Gruyter · Berlin · New York

1986

This volume was published with generous support from
The Frederick W. Hilles Publications Fund of Yale University

Library of Congress Cataloging-in-Publication Data

Nussbaum, Alan J. (Alan Jeffrey), 1947–

Head and Horn in Indo-European

(Untersuchungen zur indogermanischen Sprach- und Kulturwissenschaft = Studies in Indo-European Language and Culture ; Neue Folge / New Series 2)

Bibliography: p.

Includes index.

1. Indo-European languages – Morphology. 2. Greek language – Grammar, Comparative – Indo-European. 3. Indo-European languages – Grammar, Comparative – Greek.

I. Title. II. Series: Untersuchungen zur indogermanischen Sprach- und Kulturwissenschaft ; Neue Folge 2.

P611.N8 1986 415 85-25399

ISBN 0-89925-132-3

CIP-Kurztitelaufnahme der Deutschen Bibliothek

Nussbaum, Alan J.:

Head and Horn in Indo-European / Alan J. Nussbaum. – Berlin ; New York : de Gruyter, 1986. –

(Studies in Indo-European Language and Culture ; New Series 2)

ISBN 3-11-010449-0

NE: Untersuchungen zur indogermanischen Sprach- und Kulturwissenschaft

©

Copyright 1986 by Walter de Gruyter & Co., Berlin 30 – Printed in Germany – Alle Rechte der Übersetzung, des Nachdrucks, der photomechanischen Wiedergabe und der Anfertigung von Mikrofilmen, auch auszugsweise, vorbehalten.

Satz und Druck: Hubert & Co., Göttingen
Bindarbeiten: Lüderitz & Bauer, Berlin

Cui nisi parentibus carissimis?

Preface

The following study is a completely revised and greatly expanded version of an earlier (1976) treatment of the same subject that was never formally published, but did appear in typescript in the volume *Indo-European Studies III*, ed. C. Watkins, 1977, distributed by the Harvard Linguistics Department and no longer available. A preliminary draft was written during the academic year 1980–81 on a leave of absence made possible by the award of a Morse Junior Faculty Fellowship to me by Yale University, for which I would like to express my gratitude.

During the summers of 1982 and 1983, I improved the draft greatly by taking advantage of the comments of Anna Morpurgo Davies, Stanley Insler, Jay Jasanoff, and Calvert Watkins, with whom I discussed various aspects of the problems dealt with here, and it is a pleasure for me to acknowledge my debt to them. I am also delighted to have a chance to thank Jochem Schindler, who was, as usual, so generous with his time and suggestions on so many points that it is difficult to give an accurate idea of how much this work has gained thereby. It is more painful to note here that my awareness of how much I owe to Warren Cowgill has been made all the more acute by that great scholar's death on June 20, 1985.

The resulting manuscript was accepted for publication in the *Untersuchungen zur indogermanischen Sprach- und Kulturwissenschaft* in the spring of 1984, and I would like to express my appreciation to the editors of the series, to H. Wenzel and F. Dörfert at de Gruyter for their expeditious handling of the production of the book, and, once again, to Yale University for subventing the publication through the Frederick W. Hilles Publications Fund.

Finally, I will always be grateful to Alice Oliver, Melissa Thompson, Anna Singleton, and Bette Lewis, administrative assistants in the Yale Classics Department, for undertaking at various stages some especially arduous typing chores entirely out of the goodness of their hearts.

New Haven,
June, 1985

Alan J. Nussbaum

Contents

Preface	VII
Symbols	XII
I. $\hat{k}(e)r-n(o)$ - and $\hat{k}(e)r-(e)\mu$ - 'horn': §§ 1–8	1
§§ 3.2–3.4: forms naming the object 'horn'	2
§§ 4.1–4.4: words for horned animals	6
§ 5: some additional relevant Greek forms	8
§ 6: summary	9
§§ 7.1–7.3: morphology and inflection of $\hat{k}(e)m(o)$ - 'horn'?	11
§§ 8.1–8.5: morphology and inflection of $\hat{k}(e)r(e)\mu$ - 'horn'?	14
II a. $\hat{k}(e)r-(e)h_2$ - 'horn': §§ 9–16	19
§§ 9.1–9.8: preview of evidence for $\hat{k}(e)r-(e)h_2$ - 'horn/ head'; preliminary discussion of kind(s) of anal- ysis available	19
§§ 10–11: Hittite <i>karāyar</i> 'horn(s)'	31
§§ 12–14: evidence for a Mycenaean Gk. <i>kerā</i> 'horn (mate- rial)'	36
§§ 15–16: summary and conclusions	46
II b. $\hat{k}r-(e)h_2$ - 'head': §§ 17–29	48
§§ 17–27: Greek <i>κάρῃ</i>	48
§§ 17–20: not from $*\hat{k}r_1h_2sn$	48
§ 20: represents $\hat{k}r-e h_2$ -	55
§§ 22–24: as first compound member	55
§ 25: als second compound member	71
§§ 26.2–26.11: ἐπὶ κάρῃ/ἐπικάρῃ	75
§§ 28.2–28.3: Indo-Iranian evidence	95
§§ 28.4–28.5: Hittite (<i>kit</i>) <i>kar</i>	96
§ 29: summary; the segmentation $\hat{k}(e)r-(e)h_2$ -; schematic representation of the data so far	99
II c. $\hat{k}ér-h_2$ 'head-bone (substance)' → $\hat{k}r-éh_2$ 'skull' > 'head': §§ 30–39	102
§§ 30–32: $\hat{k}(e)r-(e)h_2$ - and $\hat{k}r-(e)h_2$ -: two PIE paradigms rather than one	102

§ 33: $\acute{k}ér-h_2 \rightarrow$ potentially collective derivative $\acute{k}érh_2-o-$ 'head'	110
§§ 34–37: $\acute{k}ér-h_2 \rightarrow$ collective $\acute{k}ér-\acute{e}h_2$ 'head'	117
§ 38: hysterokinetic $\acute{k}ér-\acute{e}h_2/\acute{k}ér-h_2$ - underlying evidence for $\acute{k}ér-(e)h_2$ - 'head'	135
§ 39: schematic summary	137
III a. $\acute{k}ér-h_2-s$ 'horn: vs. $\acute{k}ér-h_2-os$ 'head': §§ 40–47	139
§§ 41–42: obstacles to tracing both s -systems to a single PIE pre-form	139
§ 43: $\acute{k}ér-h_2 \rightarrow \acute{k}érh_2-s$ 'horn' but $\acute{k}ér-(e)h_2- \rightarrow \acute{k}érh_2-os$ not direct	148
§§ 44–45: $\acute{k}ér-h_2 \rightarrow \acute{k}érh_2-s$ 'horn'	149
§§ 46–47: inflection, compound forms, further derivatives of $\acute{k}érh_2-s$	152
III b. $\acute{k}érh_2s(e)n-$ and $\acute{k}érh_2os$ 'head': §§ 48–50	158
§ 48.2: I-Ir $\acute{k}érh_2-os$ and Skt. $\acute{k}érh_2s(e)n-$	158
§ 49: $\acute{k}érh_2s(e)n-$ in Greek	159
§§ 49.2–49.6: Hom $\acute{\kappa}\acute{\alpha}\rho\eta\nu\alpha$ and derivatives (e.g. $\acute{\kappa}\acute{\rho}\alpha\nu\acute{\iota}\omicron\nu$) and compound forms (e.g. $-\acute{\kappa}\acute{\rho}\alpha\nu\omicron-$) of the n -stem	159
§ 49.7: Hom. $\acute{\kappa}\acute{\alpha}\rho\eta\tau-$	171
§ 49.8: Hom. $\acute{\kappa}\acute{\rho}\acute{\alpha}\alpha\tau-$ and Hom. + $\acute{\kappa}\acute{\rho}\acute{\alpha}\tau-$	176
§ 49.9: Hom. $\acute{\kappa}\acute{\alpha}\rho\eta\acute{\alpha}\tau-$	179
§ 49.11: summary	182
§ 49.12: Myc. evidence	183
§ 50: neut. $\acute{k}érh_2s(e)n-$ \rightarrow masc. $\acute{k}érh_2s(\acute{o})n-$ ($>$ Gmc. <i>her-san-</i>)	185
§ 50.2: as an animatizing derivative?	186
§§ 50.3–50.7: as a delocative derivative?	187
§ 50.8: further derivatives of Gmc <i>hersan-</i> ; schematic summary	192
III c. $\acute{k}érh_2/\acute{k}érh_2sn-$ vs. $\acute{k}érh_2os/\acute{k}érh_2sn-$: §§ 51–59	195
§§ 51–53: neither paradigm reconstructible for PIE – nor an r/n -stem	195
§§ 54–57: the formation of "secondary" heteroclitics in zero/ n and X/n ; $\acute{k}érh_2s-n-$ as a secondary heteroclitite; zero/ s "heteroclisys"; $\acute{k}érh_2$ vs. $\acute{k}érh_2os$ as nom-acc. to $\acute{k}érh_2s-n-$	200
§ 59: schematic summary	219

IV. $\hat{k}(e)rh_2s(e)r(o)$ - 'headgear': §§ 60–62	220
§§ 60–72: Greek $\hat{k}rh_2s(e/o)r$ -; Greek and Latin $\hat{k}(e)rh_2sro$ -	220
§ 63: Myc. $-karaor$:- an r -stem paradigm independent of $k\acute{a}r\bar{a}/kr\acute{a}hat$ - 'head'	222
§§ 65–66: the $-κραιρα$ compounds: morphology, semantics; the reconstruction of a $\hat{k}rh_2s-(e/o)r$ - 'thing on the head'	224
§ 67: summary	234
§ 68: $-er$ locatives and delocative $-(\check{e}/\check{o})r$ - derivatives	235
§ 69: Myc. $-karaor$ - and the $-κραιρα$ compounds as reflect- ing delocative $\hat{k}rh_2s-(\check{e}/\check{o})r$ -	258
§ 70: Greek and Latin $\hat{k}(e)rh_2sr-o$ - als delocative	242
§ 71: conclusions	245
§ 72: schematic summary	246
V. Hornet: the IE words for 'hornet' als possessive derivatives of $\hat{k}rh_2s-(\check{e}/\check{o})r$ - 'thing on the head' = 'antenna': §§ 73–79	248
Appendix I – Additional Remarks on $\epsilon\pi\iota\kappa\alpha\rho$	261
Appendix II – $\pi\rho\acute{o}\chi\nu$	267
Additions and Corrections	275
Literature	294
Index	298

Symbols

- C = any consonant
 H = any laryngeal
 N = n or m
 R = r or l ($\pm n$ or m); also = root
 S = suffix
 T = any stop
 V = any vowel
 $\#$ = beginning/end of a word; also = beginning/end of a hexameter
 $\overset{5}{|}$ = penthemimeral caesura
 $\overset{tr}{|}$ = trochaic caesura
 $\overset{7}{|}$ = hephthemimeral caesura
 $||$ = bucolic diæresis
[*] in the text indicates that there is further discussion in the Additions and Corrections.

I. $\hat{k}(e)r\text{-}n(o)\text{-}$ and $\hat{k}(e)r\text{-}(e)\mu\text{-}$ ‘horn’

1. Forms like Greek $\acute{\alpha}\lambda\eta$ ‘head’ and $\acute{\alpha}\epsilon\rho\alpha\varsigma$ ‘horn’ or Skt. $\acute{s}\acute{ir}a\hat{h}$ ‘head’ and $\acute{s}\acute{r}\acute{ig}a\text{-}$ ‘horn’ constitute a wide-spread and very familiar lexical family in the IE languages. But the group taken as a whole is problematical in two ways. First, there seems to be a more or less random vacillation in the root shape between $\hat{k}er\text{-}$ and $\hat{k}erh_2\text{-}$, according to the standard view¹. In addition, there is a problem with the reconstructed semantics of this root and its derivatives. It is traditionally supposed that this bi-form root is the basis both for words meaning ‘head’ and for words meaning ‘horn’. This received doctrine allows for total indeterminacy. The result is that if we start from the generally accepted formal equations, there seems to be no way of deciding whether a given formation meant ‘horn’ or ‘head’ in PIE. Looking at it the other way around, there seems to be no systematic statement possible about whether the root involved in a given type of formation with one of these two meanings was $ani\hat{t} \hat{k}er\text{-}$ or $se\hat{t} \hat{k}erh_2\text{-}$. For example: the traditionally equated Skt. $\acute{s}\acute{ir}a\hat{h}$ ‘head’ and Gk. $\acute{\alpha}\epsilon\rho\alpha\varsigma$ ‘horn’ disagree semantically while agreeing on the $se\hat{t}$ form of the root. But Gk. $\ast\acute{\alpha}\epsilon\rho\alpha\acute{\alpha}\varsigma$ (as usually reconstructed for Homeric $\acute{\alpha}\epsilon\rho\alpha\acute{\alpha}\varsigma$ ² ‘horned’) and Avestan $sr\ddot{u}\text{-}/sr\ddot{u}\ddot{u}\ddot{a}\text{-}$ ‘horn, nail’ would agree on ‘horn’ but differ as to the $se\hat{t}$ vs. $ani\hat{t}$ character of the root. [*]

In this situation, therefore, there are two unpredictable variables in play. Each of them really calls for some comment. Together in one lexical family they are enough to make the whole traditional view of this set of forms implausible enough to deserve a re-examination.

2. On the formal side, functionless and unpredictable root variations are something that the method must tolerate only as long as it is unavoidable. It is always worth looking for evidence that leads to a more systematic picture.

In a similar way, the semantic indeterminacy that pervades the usual view of these forms is not only unattractive, but implausible in

¹ Cf., e.g., Pokorny, *IEW*, 574 ff.; Frisk *GEW* and Chantraine *DELG* s. v. Walde-Hofmann *LEW* and Ernout-Meillet *DELL* s. v. *cornu*; etc. The remarks of Beekes *Development*, 200 are somewhat more systematic.

² But see below, § 47.1.

itself. No actually attested IE language has only one lexical item that means both 'head' and 'horn'. And combining them for reconstructed PIE is only possible under the further assumption that $\hat{k}er(h_2)-$ originally designated a general 'top of the body' notion of which 'head' and 'horn' must then be judged to be specializations occurring independently in the individual IE languages. But this conception of the PIE state of affairs is utterly amazing in view of the large number of archaic and very specific body part terms that are otherwise reconstructed for the protolanguage.

In order to bring some precision into this picture, a fresh approach is needed. But since the traditional formal equations lead in a circle, it is necessary to re-examine the data, to pay close attention to whether the forms in question do in fact mean 'horn' or 'head', to adopt a critical attitude toward the formal equations and reconstructions upon which the standard view is based, and to look for those formal equations which are sure to be secure enough to be used as the basis for a more systematic analysis.

3.1 Approaching the whole complex of 'head' and 'horn' words with an open mind, there quickly emerges at least a partial pattern that is consistently missed by the doubly indeterminate traditional view of the forms. Namely, there is a group of formations that have three things in common:

1) none of them requires (and the unambiguous forms exclude) the assumption of a *set* root $\hat{k}erh_2-$;

2) in every one of these items, either an $-(e)n-$ or an $-(e)\mu-$ suffix directly follows the root $\hat{k}er-$;

3) all of these forms mean 'horn'—never 'head'. A survey of these (mostly very familiar) forms makes this perfectly clear.

3.2 Indic has $\acute{s}ṛṅga-$ 'horn' (RV +) < $\hat{k}ṛ-n-g-o-$ ³. Beside this are traces of $*śrunka-$ 'horn' and $*śrū-$ 'horn', reconstructed from Indo-Aryan forms⁴.

³ The $-ga-$ of $\acute{s}ṛṅga-$ may be segmentable ($-g-a-$) if the velar is identified with that of certain other formations—notably in words for body-parts. These include velars suffixed to primary stems (e.g. RV + $\acute{a}ś-g/k$ 'blood') as well as more elaborate formations ($pt-er-u-g-$ in Gk. πτέρυξ 'wing', reminiscent in turn of Gaulish $\acute{x}áϱvυξ$ 'horn' < $\hat{k}ṛ-n-u-g-$, on which cf. § 7.3).

The suggestion that $\acute{s}ṛṅga-$ reflects $\hat{k}ṛ-n-g^{\#}o-$ with a $-g^{\#}o-$ that may be identified in Gk. κόρυμβα 'terminal ornaments of a ship' (as if < $\hat{k}or-u-n-g^{\#}o-$: W-D 2.2, 544) is

For Avestan, Bartholomae (*Air W* 1647) gives both *sruuā-* and *srū-* (cf. Indic **śrū-* above) 'horn, nail, talon'. Of the two, the stem *sruuā-* is by far the better-established one, appearing in the nom. and acc. pl. *sruuā*, the acc. dual *sruuāē*(čā)/*sruiie* (< *sruiie*), and the dat. dual *sruuā-biia*. Where the gender of *sruuā-* can be determined, it is feminine. The dual can mean 'both (sets of) nails'.

The stem *srū-* is in a more problematical position. There could be a non-neuter acc. pl. **sruiō*, but only if this is read for *sruiūō* (and means 'horns' in the first place) at V. 19.42. The form is therefore not worth much. Beyond this, the potential support for *srū-* 'horn' consists

made less likely by Gk. $\kappa\rho\alpha\gamma\gamma\acute{\omega}\nu$, -όνος 'shrimp' which might possibly be an endocentric -ών derivative that meant 'horn-like (thing)'.

Since the vast majority of Gk. -ών derivatives of comparable formal and semantic type are substantives with endocentric semantics that are made specifically from adjectives (βαίος 'small' : βαίων, -όνος 'type of fish'), one might suspect that $\kappa\rho\alpha\gamma\gamma\acute{\omega}\nu$ was derived from a $\kappa\rho\alpha\gamma\gamma\text{-}o$ 'horn-like'. This would imply a $\kappa\rho\alpha\gamma\gamma\text{-}$ (< $\hat{k}rng\text{-}$) 'horn' that would seem to be an *n*-stem with added -g- (as in $\pi\tau\epsilon\rho\upsilon\text{-}\gamma\text{-}$ 'wing' above): $\hat{k}rn\text{-}g\text{-}$. If so, $\hat{k}rng\text{-}o$ 'horn-like, horn-shaped' would be basically a possessive adjective that has developed semantically from 'having X' to 'X-like', for which cf., e.g., κύκλος 'circle' : κυκλό-(F)εντ- 'circular' (κυκλόεις).

If so, it could be that $\hat{k}rng\text{-}o$ 'horn-like' has simply been substantivized without suffixation to give Ved. *śṛṅga-* 'horn'. This is all less than certain, however, if only because of the systematic vacillation of the stem $\hat{k}(e)mo-$ itself between 'horn' and 'horned' (cf. § 7.3).

But it is also possible that $\kappa\rho\alpha\gamma\gamma\acute{\omega}\nu$ 'shrimp' originally meant not 'horn-like (thing)', but rather 'having horns (i.e. antennae)'. In that case one could even think of starting with a $\hat{k}rng\text{-}H(\delta)n\text{-}$, which would also imply a stem $\hat{k}rng\text{-}$ 'horn'.

If the Hsch. gloss $\kappa\rho\acute{\alpha}\gamma\iota\omicron\nu$ σύνστρομμα ἐν κεφαλῇ is to be taken as σύστρομμα ἐν κεφαλῇ 'protuberance on the head', we may have here the Greek reflex of a $\hat{k}r\text{-}n\text{-}g\text{-}i\omicron$. This could be plausibly identified with the $\hat{k}r\text{-}n\text{-}g(o)\text{-}$ of Skt. *śṛṅga-* and Gk. $\kappa\rho\alpha\gamma\gamma\acute{\omega}\nu$ on formal grounds, and the assumption that a term for something protruding from the head might be a derivative of a nominal stem meaning 'horn' also seems reasonable. The only small problem here arises in the contrast in syllabification $\hat{k}r\text{-}n\text{-}g\text{-}$ vs. $\hat{k}r\text{-}n\text{-}g\text{-}$. But it is $\hat{k}r\text{-}n\text{-}g\text{-}$ and not $\hat{k}r\text{-}n\text{-}g\text{-}$ that shows the unexpected vocalization, and whether or not $\kappa\rho\acute{\alpha}\gamma\iota\omicron\nu$ reflects a stem $\hat{k}r\text{-}n\text{-}g\text{-}$, the vocalization $\hat{k}r\text{-}n\text{-}g\text{-}$ is probably analogical—perhaps to the wide-spread $\hat{k}r\text{-}n\text{-}o\text{-}$, where $\hat{k}r\text{-}n\text{-}$ is completely regular.

However, it may be that the correct reading of the faulty σύνστρομμα is not σύστρομμα but σύντρομμα 'fracture' (cf. Latte *Hsch. ad loc.*). In that case, the probable analysis of $\kappa\rho\acute{\alpha}\gamma\iota\omicron\nu$ is a non-Ionic $\kappa\rho\acute{\alpha}\text{-}\acute{\alpha}\gamma\text{-}\iota\omicron\text{-}$ (cf. $\kappa\rho\eta\text{-}\delta\epsilon\mu\nu\nu\omicron$ for the first compound member and (F) $\acute{\alpha}\gamma\text{-}\nu\mu\iota$ for the second, which would then be a neuter verbal abstract of the type $\acute{\alpha}\mu\acute{\alpha}\rho\tau\iota\omicron\nu$ 'fault, failure' to $\acute{\alpha}\mu\acute{\alpha}\rho\tau\text{-}\acute{\alpha}\nu\omega$ or $\sigma\phi\acute{\alpha}\gamma\iota\omicron\nu$ 'sacrifice' to $\sigma\phi\acute{\alpha}\zeta\omega$ 'slaughter'). If so, the word ceases to be of direct relevance to the $\hat{k}r\text{-}n\text{-}g\text{-}$ of *śṛṅga-* and $\kappa\rho\alpha\gamma\gamma\acute{\omega}\nu$ but supplies a second example of $\kappa\rho\acute{\alpha}\text{-}$ as a first compound member (on which see § 24).

⁴ Turner, *CDI-AL*, entries 12713 and 12715.

of an acc. dual *sruuī*, occurring as a simplex variant to *sruue* (but contrast *sruīe* as above) and possibly as the first member of the compound *sruuī.staiiām* (g. pl.) 'ayant 2 cornes pour arrêts' (?)⁵.

In short, Avestan either points exclusively to an older $\acute{s}ru(\mu)-\bar{a}-$, or to an ablauting $\acute{s}r\mu\bar{a}-/\acute{s}r\bar{u}-$ (as if $< \hat{k}r\mu-eh_2-/\hat{k}ru-h_2-$) that has been almost completely levelled to $\acute{s}ru(\mu)-\bar{a}-$. Further discussion of this question may be postponed. For the moment it need only be noted that *sruuā-* or *sruuā-/srū-* reflects a $\hat{k}r-u-$ (plus $-(e)h_2-$ to be sure) that combines *aniṭ* $\hat{k}(e)r-$ followed by a $-u-$ formant with the meaning 'horn' and not 'head'.

3.3 Greek δῖκροος 'forked, cleft' (also δῖκρους, δικρός, δικροῦς and normalized—or "hyphaeresized"—δῖκρος; A. + ⁶) reflects a δῖκροφο- 'two-horned' > 'forked'. This, in turn, points to either a $-\hat{k}ro\mu o-$ or a $-\hat{k}ro\mu-$ (plus compositional $-o-$) with the meaning 'horn'. Since there is no evidence anywhere of a thematic $\hat{k}(e)r-o-$, the second member of this compound may be further analyzed as $-\hat{k}r-o\mu-(o-)$ 'horn'. It would seem to be a rather archaic formation, given that κέρας is the normal Greek word for 'horn', and that (δι-)κροφο- is neither synchronically derivable nor the basis of any further derivatives.

Latin has both *cornum* (Ter. +) and *cornu*. While it seems that *cornum* may safely be equated with Gmc. *hurna-* and Celt. *karno-* ($\hat{k}rno-$), *cornu* is more difficult. It is possible, however, that Latin had a *kornom* ($< \hat{k}rno-$) beside a *korñ* (§ 8) 'horn', and that *korñ* became *kornū* because of *kornom*.

Much more problematical is the case of *ceruix* '(nape of the) neck'. According to one usual view (cf. W-H s. v. with literature), this word does belong in the 'head'/'horn' group, but not among the 'horn' forms now being surveyed. For it has been taken to reflect a $\hat{k}ers-\mu eik-$ with a first member $\hat{k}ers-$ 'head' and a verbal second member from the root of *uincire* 'bind'. At least three objections stand in the way:

⁵ Duchesne-Guillemin, *CA*, 149, cf. Gershevitch, *AHM*, 280f. The compound *sruuō-zana-*, which used to be referred to *sruu(ā)-* 'horn', apparently means 'lead-en-jawed' (*sruua-* 'lead') and is thus unrelated (Gershevitch, *AHM*, 280f.).

sruuara- is generally thought to reflect $*srū-barā-$ and mean 'horn-bearing'. But given that it occurs only with *aži-* 'snake' (*ažim sruuaram* Y. 9.11), it seems possible that *sruuara-* belongs with *sruuant-* 'creeping' instead.

See also § 8.4.

⁶ See J. Ilberg, *Archiv für Papyrusforschung* 4, 281 ff. (esp. 282 n. 1) for examples.

⁷ Cf. δῖ-κραιρα 'double, cleft' < 'two-horned' and see §§ 65, 66.5..

1) no stem $\hat{k}ers$ - for 'head' otherwise exists in Latin or elsewhere (see below);

2) the second member of such a compound may be expected to have a zero grade in a root of this shape cf. $(iu)-d\acute{ic}-(em)/O$. $(med)-d\acute{iss}$;

3) it seems arbitrary to ignore the whole class of Latin body-part terms in $-ik$ - for the sake of such an analysis (so E-M *s.v.*): *coxendix* 'hip(bone)', *cutic-ula* 'skin', *landic-a* 'clitoris', *ue(n)sic-a* 'bladder', *umbilic-us* 'navel'.

The first and third objections can also be made to the suggestion (W-H *s.v.*) that *ceruix* reflects a $\hat{k}ers-\mu iH-k$ - with the second member taken from the root of *uiere* and extended by $-k$ - on the model of $-tr-ih_2 \rightarrow -tr-ih_2-k$ - (e.g. *uictrix*) in the fem. agent nouns. In addition, *uiere* basically means 'plait, weave' and is therefore semantically far-fetched.

The most plausible analysis of the Latin word for 'neck' is therefore $cer\mu-\bar{i}c$ -. But since the $-\bar{i}c$ - of these body-part terms has little or no semantic function (cf. *umbil-\bar{i}c-us* 'navel' with ὀμφαλός 'navel'), this would leave us with a *ceru*- '(nape of the) neck'. It is conceivable that $\hat{k}eru$ - 'horn' was used in this case to denote the bony topmost section of the spinal column (whence 'nape of the neck' and finally 'neck'), but it is entirely possible that $cer\mu-\bar{i}c$ - does not belong in the 'head'/'horn' group at all⁸.

3.4 The Hesychius gloss κάρνον· τὴν σάλπιγγα. Γαλάται together with Welsh *carn* 'hoof' (and O Corn. *ewin-carn*, Breton *karn*) and Gaulish κάρνονξ 'trumpet' point to a Celtic $kar-n-o-/kar-n-u-(g)$ - 'horn'. The $-o$ - and $-u$ - stems side by side here are closely paralleled only by the Latin situation (*cornum/cornu*). Breton *korn* (pl. *kern*) 'drinking horn', Welsh *corn* (pl. *cym*) 'horn' and M Ir. *corn* 'drinking horn, trumpet' are probably Latin loanwords⁹ (or Latin-influenced

⁸ Although precise morphological analysis is not possible, Ved. *karúkara*- (AV, ŚB) 'neck joint' might provide a $keru-h_2$ - (cf. I-Ir *zízhu-H-/zízhu-eH*- 'tongue' for the segmentation and see § 8). A Latin $ker\mu-ih_2$ - could easily be aligned with this. But there is insufficient information on which to base an interpretation of the rest of the form: $keru-h_2$ - plus $k^{\#}ol(H)-o$ - cf. πόλος etc.? Or $keru-h_2-k$ - (cf. $ker\mu-ih_2-k$ - > *ceruix* itself) plus $-ero$ -?

Matters become still less controllable if one takes Gmc. *hrugja*- 'back' (Oic *hryggr*, OHG *hrucki*) into account. See Mayrhofer *KEWAi* 1, 168.

⁹ Despite local and tribal names like *Cornouii* (cf. Jackson, *LHEB*, 367 ff.), which are not demonstrably related to the IE words for 'horn'. Cf. now L. Saint Joseph, *Problems in the Development of the IE Laryngeals in Celtic* (Diss. Harvard 1980), 112.

forms of the native correspondents) with the original forms preserved in Brittonic only, and in the transferred meaning 'hoof'. Another word for 'hoof' that could belong to the 'horn' group is O Ir. *cróa/crua* (gl. *ungula* Sg. 46^b13) with dat. sg. *crū*, nom. pl. *cruī*, dat. pl. *cruib*. This word may reflect either *krou-io-* (cf. Gk. δῖ-κροϝ-ος above and Irish *noe/nua(e)* 'new' < *noy-io-*) or, possibly, *kruy-io-* (cf. Av. *sruu-ī* § 3.2). In either case the *-io-* formant is easily paralleled as a (seemingly functionless) extension in body part terms both in Irish itself (*críde* 'heart' < *kṛd-io-*, *bruinne* 'breast' < *bhrus-n-io-*) and elsewhere (Ved. *āśīya-* 'mouth' beside *ās-* 'id.', Arm. *ariun* 'blood' < *ehar-iṣo-(o)n-* etc.).

In Germanic, the individual languages point to a *hurna-* (Goth. *haurn*, OIc, OHG etc. *horn*) 'horn'. This, of course, reflects $\hat{k}y-n-o-$.

4. Words for 'stag' and other horned animals are also legitimate evidence here insofar as they are derivatives of words for 'horn'.

In Indic we have *śarabhā-* (AV) '(a kind of) deer' and a large number of Indo-Aryan descendants¹⁰ reflecting $\hat{k}er-y-bho-$ with the animal-naming *-bho-* suffix¹¹. Indo-Aryan forms also provide evidence for a **śarva-* ($\hat{k}er-y-o-$) and a **śrawva-*,¹² apparently a thematic derivative, with *vyddhi*, of **śrū-* 'horn'.

4.2 The Hesychius gloss $\kappa\acute{\alpha}\rho\nu\omicron\varsigma$ ¹³ ... βόσκημα, πρόβατον is plausibly interpreted as 'horned' < $\hat{k}y-n-o-$ and $\kappa\rho\alpha\gamma\gamma\acute{\omega}\nu$ 'shrimp' may point to a $\hat{k}y-n-(g)-$ 'horn' (see note 3). On $\kappa\rho\epsilon\alpha\acute{o}\varsigma$ see below (§ 47.1). $\kappa\acute{\alpha}\rho\tau\eta\nu$ τὴν βοῦν ... (Hesych.) could represent a $\hat{k}y-tā-$ 'horned' and thus point to a root derivative rather than that of the *u-* and *n-* stems which are otherwise standard in this group, but this is extremely unlikely. Not only is the morphology unparalleled, but the gloss itself is suspect and there is an alternate explanation for the form. Hesychius attributes $\kappa\acute{\alpha}\rho\tau\eta\nu$ to the $\kappa\rho\eta\tau\epsilon\varsigma$, but this is inconsistent with the *-ην*. On the other hand, $\kappa\acute{\alpha}\rho\tau\eta\nu$ τὴν ... to $\kappa\acute{\alpha}\rho\tau\alpha\nu$ τὴν ... is an easy emendation that seems necessary in any case. A more serious problem is that the gloss continues καὶ τὸν οἰκέτην οἱ αὐτοί ... which doesn't make

¹⁰ Turner, *CDI-AL*, no. 12331.

¹¹ Cf., e.g., W-D 2.2, 746.

¹² Turner, *CDI-AL*, entries 12341, 12715.

¹³ The word is also glossed φθειρ 'louse' which, if the whole lemma is to be taken at face value at all, may indicate that there is a homonymous word related to $\kappa\acute{\alpha}\rho\iota\varsigma$ 'bug' and/or $\kappa\acute{\alpha}\rho$ φθειρ (Hsch.). See in any case Chantraine *DELG* and Frisk *GEW*, sv $\kappa\acute{\alpha}\rho\nu\omicron\varsigma$.

very much sense, and the lemma seems quite corrupt in general¹⁴. Insofar as one may have any confidence in a Cretan $\kappa\acute{\alpha}\rho\tau\alpha\nu$ meaning $\tau\eta\nu$ $\beta\omicron\upsilon\nu$, it is probably best taken as a hypocorism for $\kappa\alpha\rho\tau\alpha\iota\pi\omicron\varsigma$, pl. $\kappa\alpha\rho\tau\alpha\iota\pi\omicron\delta\alpha$ (Gortyn) 'cattle' (cf. Hom. etc. $\kappa\rho\alpha\tau\alpha\iota-\pi\omicron\upsilon\varsigma$ and Frisk, Chantaine s.v. $\kappa\alpha\rho\tau\alpha\iota\pi\omicron\varsigma$). Other Greek animal names possibly derived from a word for 'horn' are either problematical or are derived from $\kappa\acute{\epsilon}\rho\alpha\varsigma$ itself, and so may be deferred for the moment¹⁵.

4.3 Latin has *ceruos* 'stag' which, to judge by Indic $*\acute{s}arva-$ (as above), if nothing else, ought to reflect $\hat{k}er-\mu-o-$.

Welsh *carw* 'stag' with its Cornish (*carow*) and Breton (*qaro*) equivalents reflects a Celtic $\hat{k}ar-\mu-o-$. On the further analysis of this see below (note 26).

In Germanic we find forms of the types OHG *hiruz* 'hart'/Olc. *hjoṛtr* (Gmc *heruta-* < $\hat{k}er-u-d-o-$) and OHG *hrind* 'cow'/OS *hrīth* ($\hat{k}r-en-to-$), and OE *hrȳder* ($\hat{k}r-ŋ-to-$). The $-d-$ formant found with the u -stem $\hat{k}er-u-$ in the 'hart' words has no apparent function (cf. $\hat{k}er-u-d-o-$ 'hart' with $\hat{k}er-\mu-o-$ 'id.' in L. *ceruos* etc.). The vocalism of $\hat{k}r-en-to-$ (*hrind*) vs. that of $\hat{k}r-ŋ-to-$ (*hrȳder*) is probably due to a process of derivational $v\ddot{r}ddhi$ that may perhaps be paralleled by Avestan *patarata-* 'winged' (< *pet-er-to-*; cf. Hitt. *pattar* 'wing' < *pot-ŕ*). [*]

4.4.1 The Balto-Slavic derivatives of this group are of special value given that the normal IE words for 'horn' were replaced by *raga-*

¹⁴ Cf. Latte *Hsch.*, sv $\kappa\acute{\alpha}\rho\tau\eta$.

¹⁵ $\kappa\acute{\alpha}\rho\alpha\beta\omicron\varsigma$ 'horned beetle' (Arist. *HA* 531^b25; *vv.11*. $\kappa\alpha\rho\acute{\alpha}\beta\iota\omicron\iota$, $\kappa\alpha\rho\acute{\alpha}\mu\beta\iota\omicron\iota$), also 'crayfish' (Ar. *Frag* 318.7: codd. $\kappa\acute{\alpha}\rho\alpha\beta\omicron\nu$) is generally considered a "Mediterranean" word (cf. also $\kappa\alpha\rho\alpha\beta\iota\varsigma$ (Hsch.) and $\kappa\acute{\alpha}\rho\iota\varsigma$ 'crustacean' Arist., Anan.?).

$\kappa\epsilon\rho\acute{\alpha}\mu\beta\upsilon\varsigma$ 'longicorn beetle' (Nic., Hsch. – who also gives another possibly related insect name: $\kappa\epsilon\rho\acute{\alpha}\mu\beta\eta\lambda\omicron\nu$) is probably derived from $\kappa\acute{\epsilon}\rho\alpha\varsigma$ with an obscure $-mb-$ element found in other insect and bird names, and may be at least partly inherited (cf., with Chantaine *DELG*, 516 $\sigma\eta\rho\alpha\mu\beta\omicron\varsigma$ (Hsch.) '(kind of) dung beetle', $\kappa\acute{\omicron}\lambda\upsilon\mu\beta\omicron\varsigma$ / $\kappa\omicron\lambda\upsilon\mu\beta\iota\varsigma$ (Ar.) '(diving) bird', to which, in turn, cf. L. *columba* and $-us$ 'pigeon, dove' and *palumbes* and $-is/palumbus$ and $-a$ 'wood-pigeon, ring-dove', OCS *golǫbǫ* 'pigeon, dove', and Slavic $*astręb-$ (e.g. RCS *jastrjǫbŭ* 'hawk'). To $\kappa\epsilon\rho\acute{\alpha}\mu\beta(υ\varsigma)$ etc., however, cf. also $\kappa\acute{\omicron}\rho\upsilon\mu\beta\alpha$ (note 3 above and § 5 with note 21 below).

Other animal- and (plant-) naming terms derived from $\kappa\acute{\epsilon}\rho\alpha\varsigma$ (some perhaps by way of $\kappa\epsilon\rho\acute{\alpha}\iota\alpha$) include: $\kappa\epsilon\rho\acute{\alpha}\iota\varsigma$ ('crow' Hsch., Lyc.; presumably from the shape of the beak); $\kappa\epsilon\rho\acute{\alpha}\iota\delta\epsilon\varsigma$ τῶν προβάτων τὰ θήλεια, τὰ ἐνδον ὀδόντας ἔχοντα (Hsch.); $\kappa\epsilon\rho\acute{\alpha}\iota\tau\iota\varsigma$ 'fenugreek'. These derivatives can of course play no role in arriving at an analysis of $\kappa\acute{\epsilon}\rho\alpha\varsigma$ itself.

See below on: $\kappa\acute{\alpha}\rho\alpha\nu\nu\omicron\varsigma$... ἡ ἔριφος ... (§§ 49.4, 49.6c); $\kappa\acute{\alpha}\rho\alpha$ αἰὲς ἡμερος ... (§ 47.2); $\kappa\alpha\rho\alpha\nu\acute{\omega}$ τὴν αἰγα (note 21 to § 49.6 in Part IIIb.).

in Baltic and Slavic. We have Latvian *sirna* ($\hat{k}r\text{-}n\text{-}\bar{a}$) ‘roe’ and OPr. *sirwis* ‘roebuck’ (a replacement of the original thematic formation: cf., for example, OPr. *ragis* ‘horn’ vs. Lith. *rāgas*).¹⁶ Slavic likewise has a $\hat{k}r\text{-}n\text{-}\bar{a}$: ORuss. *sīrna*, SCr. *sīna*, etc.

The words for ‘cow’ in Baltic (Lith. *kārvė*) and Slavic (RCS *krava*, SCr. *krāva* etc.) are generally included here as well and compared to *ceruos* etc. The forms point to a B-Sl. $k\bar{o}r\text{-}\mu\text{-}\bar{a}$. The initial velar of these forms (as opposed to the palatal of Latv. *sirna*, SCr. *sīna*, etc. as above) is not a strong objection to the etymology (cf. Lith. *pēkus*/OPr. *pecku* ‘(Klein)vieh’ vs. Ved. *pásu/pasú-* etc.). The starting point, in any case, would seem to be a $k\bar{o}r\mu\bar{a}$. The lengthened root vocalism is best taken as the result of a $\nu\ddot{r}ddhi$ process proper to the formation of feminine derivatives from masculines, and can be paralleled by cases like masc. $\mu\bar{o}rno\text{-}$ ‘raven’ (Lith. *vařnas*, OCS *vranŭ*, etc.) vs. fem. $\mu\bar{o}rn\bar{a}\text{-}$ (Lith. *várna*, Serb. *vřàna*, etc.) and even *udro-* (Av. *udra-*, OHG *ottar*, etc. ‘otter’) vs. $\bar{u}dr\bar{a}\text{-}$ in Lith. *údra*, Latv. *údr(i)s*, Russ. *vydra*. One would then start with a masc. $k\bar{o}r\mu\text{-}o\text{-}$ ‘horned (animal)’ comparable to Latin *ceruos*, and identify the B-Sl. words for ‘cow’ as its feminine derivative (with $\nu\ddot{r}ddhi$) $k\bar{o}r\mu\bar{a}$. There is no positive justification for a $*korHueh_2$ here. Finally, OPr. *curwis* ‘ox’ is most easily taken simply from $k\bar{r}\mu\text{-}o\text{-}$ (cf. Welsh *carw* ‘stag’ etc.) in the very first instance¹⁷.

4.4.2 There is a Tocharian representative in this group if, as seems plausible, Toch. A *řaru*/B *řerwe* ‘hunter’ may be taken as reflecting $\hat{k}\bar{e}r\mu\text{-}o\text{-}$, a $\nu\ddot{r}ddhi$ derivative (‘he of the stag’ or the like), of $\hat{k}er\mu\text{-}o\text{-}$ ‘stag’ (as in L. *ceruos* above)¹⁸. The Hesychius gloss $\sigma\epsilon\rho\gamma\omicron\iota$: $\xi\lambda\alpha\phi\omicron\iota$ could represent a $\sigma\epsilon\rho\phi\omicron\iota$, which would be an exact match for L. *ceruos* from some satem language, but naturally this is unsure¹⁹.

5. In addition, there are a few Greek forms which, although belonging with the ‘horn’ words etymologically, are semantically less clear-cut:

¹⁶ A relationship between Lith. *stīrna*/Latv. *stīrna* ‘roe’ and Latv. *sirna* is hard to deny, but obscure in its details.

¹⁷ Cf., e.g., Stang *VGBS*, 77 ff.

¹⁸ I owe this suggested analysis to Jay Jasanoff. The etymology given by Pedersen (*Tocharisch*, 48), who identifies the root as that of $\chi\alpha\iota\phi\omega$ etc., and offers Skt. *lubdha-* ‘hunter’ as a semantic parallel, is not satisfactory. The $\hat{g}h\bar{e}r\text{-}\mu\text{-}o\text{-}$ it requires would have to be a deverbative adjective in $\text{-}\mu\text{-}o\text{-}$, a formation in which a lengthened-grade root is out of place.

¹⁹ It is not clear to me what, if anything, is contributed by Alb. *ka* ‘ox’.

κόρυδος 'crested (lark)' shows a $\hat{k}or-u-d-o-$ 'crested' that is reminiscent of Gmc. $\hat{k}er-u-d-o-$ 'horned (animal)', 'stag' (OHG *hiruz*/OIc. *hjoŕtr*).

It is difficult to separate Greek $\kappa\omicron\rho\upsilon-\delta-$ 'crest' from Gmc. $\hat{k}er-u-d-$ 'horn' and, semantically speaking, this furnishes a highly probable example of a stem originally meaning 'horn' which has adopted the meaning 'crest' in Greek. [*]

This being the case, it becomes extremely likely that $\kappa\omicron\rho\upsilon-\theta-$ 'helmet' is also originally a word for 'horn' and that it has developed to 'helmet' by way of 'crest'. The same will be true of $\kappa\rho\acute{\alpha}\nu\omicron\varsigma$ 'helmet', ultimately reflecting $\hat{k}r-ne-s-$ (or $\hat{k}r-n-es-$?) *'horn' > *'crest' > 'helmet'.

$\kappa\omicron\rho\upsilon\phi\acute{\eta}$ only means 'crest' (of a mountain or a horse) in the *Iliad* and the *Odyssey*, and would then seem to parallel $\kappa\omicron\rho\upsilon-\delta-$ and $\kappa\omicron\rho\upsilon-\theta-$ *'horn' > 'crest'. Furthermore, the denominative $\kappa\omicron\rho\acute{\upsilon}\pi\tau\omega$ ($\kappa\omicron\rho\upsilon-\phi-\mu\epsilon/o-$) means 'butt with the horns' (Theoc. 3.5)²⁰. We may thus include $\kappa\omicron\rho\upsilon\phi\acute{\eta}$ among the 'horn' forms.

Finally $\kappa\omicron\rho\upsilon\mu\beta\alpha$ (Hom. *pl. tant.*) is also a form originally meaning 'horn' or a derivative of a word for 'horn'. The $\kappa\omicron\rho\upsilon\mu\beta\alpha$ are the projecting terminal ornaments at the stem and/or stern of a ship²¹ and to Homeric ... $\nu\eta\omega\acute{\nu}$ ἀποκόψειν ἄκρα $\kappa\omicron\rho\upsilon\mu\beta\alpha$ (I 241) cf. the formula ... $\nu\epsilon\omega\acute{\nu}$ ὀρθοκραιράων: -κραιρα compounds refer to '-horned' only (cf. $\beta\omicron\omega\acute{\nu}$ ὀρθοκραιράων and see below § 65)²².

6. What has emerged so far from this survey of the IE words for horn (other than $\kappa\acute{\epsilon}\rho\alpha\varsigma$) and their derivatives is that the root in all these formations either must be or could be an $ani\hat{t} \hat{k}er-$. An assumed $\hat{k}erh_2-$ is unambiguously excluded by Indic $\acute{s}r-\acute{n}-(ga)-$, * $\acute{s}r-u-n-(ka)-$, * $\acute{s}arva-$, and * $\acute{s}tauva-$; Avestan $sruu(\bar{a})-$; Greek $\acute{\kappa}\acute{\alpha}\rho\nu\omicron\varsigma$, $\kappa\rho\acute{\alpha}\nu\omicron\varsigma$, $\delta\acute{\iota}\kappa\rho\omicron\phi\omicron\varsigma$ ²³, and $\kappa\rho\alpha\gamma\gamma\omega\acute{\nu}$; Latin *cornum/cornu*²⁴; OHG *hrind*²⁵; SCr.

²⁰ (... φυλάσσειο) μή τυ $\kappa\omicron\rho\acute{\upsilon}\pi\eta$ 'lest he butt you'.

²¹ Hsch: $\kappa\omicron\rho\upsilon\mu\beta\alpha$ τὰ ὑπ' ἐνίων ἄφλαστα, τὰ ἀκροστόλια, τὰ ἄκρα τῶν πρυμνῶν. τὰ ἀπεξυσμένα πρὸς κόσμον τῶν νεῶν ἄκρα καὶ ἐπικεκαμμένα, ἃ ἔστι (κατὰ) τὴν πρύμναν καὶ κατὰ τὴν πρῶραν.

²² $\kappa\omicron\rho\acute{\upsilon}\nu\eta$ 'club, staff, shoot, penis' could be put here as well, but would not add much to the formal picture. Likewise, $\kappa\acute{\epsilon}\rho\nu\alpha\iota$ 'vertebral processes' could ultimately reflect a $\hat{k}er-n(o)-$ 'horn' in a metaphorical meaning. If so, however, this form is noteworthy in showing an *e*-grade root. It would be the only *-n(o)*-formation among the 'horn' words to do so.

²³ Not conclusively, however. A $-\hat{k}erh_2-\omicron\mu-o-$ could have lost its laryngeal in composition –cf. § 25.2.

²⁴ Insofar as $\hat{k}rmo-$ (providing a direct formal equation with Gmc. and Celtic) is chosen as the most probable source of *cornum*, and *cornu* is not strictly relevant (§ 3.2).

sína. On the other hand, not one of the forms surveyed above actually requires the reconstruction of a $\hat{k}erh_2$ -²⁵.

The apparent state of affairs can therefore be simply described: 1) the IE words for 'horn' reflected in Celtic, Germanic, Balto-Slavic, Italic, Indo-Iranian, Tocharian, and in Greek itself point to an *aniṣ* root $\hat{k}er-$; 2) these forms also suggest that there was an *n-* stem and a *u-* stem made on this root, although these apparently basic formations have mostly been further extended or are indicated only by derivatives.

²⁵ A $*\hat{k}r_h_2-en-$ would of course yield Gmc. $*hurin-$.

²⁶ On $\kappa\epsilon\rho\alpha\acute{o}\varsigma$ cf. § 47.1.

The Celtic forms in particular (both of the type W. *carw* and of the type W. *carn*) have repeatedly been reconstructed with a $\hat{k}r-$ (e.g. Pokorny *IEW*, 576; Pedersen *VGKS*, I.51f., 180) which is completely unnecessary. To W. *carw*, Bret. *qaro*, Corn. *carow* < $\hat{k}r_h_2-$ cf. W. *marw*, Bret. *maro*, Corn. *marow* 'dead' < m_rh_2- . Before *u* (and *i* and *s*), Celtic *ar* from *r* is entirely regular and $\hat{k}r_h_2-$ for W. *carw* etc. thus presents no problem.

Whether *r* may also yield Celtic *ar* (and not *ri*) before *n* (thus $\hat{k}r_h_2-$ > W. *carn* etc.) is a more complicated question. But on balance, the evidence suggests that $-r_n-$ could become Celtic $-arn-$ (cf. E. Hamp *EFL*², 226f. and *Celtica* 11, 70; St. Joseph *Problems*, 238 ff.). In any case, alleged examples of $-rHC-$ directly continued by Celtic $-arC-$ are generally suspect: e.g. Irish *ard* 'high' cf. Skt. *ūrdhvā-* but also Av. *araduna-*; W. *sarn* 'causeway' cf. Skt. *stīrṇā-*, L. *strātus* but also Gk. $\sigma\tau\rho\alpha\tau\acute{o}\varsigma$; and W., Co., Br. *darn* 'piece' no more requires the assumption of a *seṭ* root than do Ir. *ard* and W. *sarn*.

In Balto-Slavic, *der-* 'split' is the basis for a very large lexical family which includes forms with practically all possible root vocalisms. Lithuanian has *dir̃ti* 'tear, flay' as well as *dir̃ti* (cf. *dir̃iū*) and even *dūr̃ti* 'stab' (related?), while typical Slavic forms are OCS *derō*, *dūrati* and *dīra* 'σχίσμα' (but R. *dyrá* 'hole' vs. OPol. *dura* vs. OCzech. *diera* : *dūr-* / *dor-* / *dě-*). Much of this material must result from secondary developments, but the details are difficult to sort out—cf. Fraenkel *LEW* 96f. (*dir̃ti* and *dir̃vā*); Trautmann *BSIW* 51f.; Berneker *SEW* 179f. ($-darō$), 185 (*derō*), 201f. (*dīra*, *dirajo*); Vasmer *REW* 344 (*derū*), 386 (*dyrá*). This elaborate group provides little certainty about whether and under what circumstances PIE had a *derH-* beside *der-*.

The situation in Indo-Iranian is also unfavorable to the assumption that *darn* must necessarily reflect a *dṛH-no-*. The only *seṭ*-looking forms in the RV are the intensives *dardarīmi*, *dardarīti* (together with *adardiruh* and subj. *dardirāt*—cf. also *dārīman-* 'destruction'). But this no more indicates a *seṭ* root as such than, e.g., *cākaśīti* 'appears' (cf. *cāṣṭe* 'sees, appears' and, further, *téxmuq* 'sign'). Otherwise, the RV verbal system has *aniṣ* forms (*darṣi*, *dadṛvāms*, *darṣat* etc. Cf. also Av. *darata-*). *Seṭ*-looking *dīrṇā-* (B +) goes hand in hand with the optatives *dīryéta* (TS; I would like to thank Patrick Hollifield for pointing this form out to me), *dṛṇīyāt* (ŠB) and passive *dīryáte* (B +). Clearly all this is far from requiring a *dṛH-no-* rather than *dṛ-no-* for Celtic *darn*.

As pointed out above (§ 4), the Balto-Slavic forms of the group Lith. *káravė*, RCS *krava* 'cow' probably point to a lengthened grade *kōrṇā* (like B-S *ūdṛā* 'otter'—cf. also the type Lith. *vilké* 'she-wolf'). There are no grounds for assuming a $*korHuā$.

It is in light of this that $\kappa\acute{\epsilon}\rho\alpha\varsigma$ 'horn' (and the related forms that seem to show a *set* by-form of the root) have to be analyzed.

But before going on to the rest of the forms in the 'head'/'horn' group, there is a final question concerning the *n-* and *u-* stems to be dealt with. That is the question of whether it is possible to specify any further details of the inflectional characteristics of these two formations.

7.1 For the *n-* stem in particular, there is very little to go on. In the first place, it does not survive as such anywhere. Several forms do appear to reflect an *n-* stem either directly or as the basis of exocentric derivatives: $\acute{\varsigma}\acute{\eta}n-ga-$ 'horn'; $\kappa\acute{\alpha}\rho\nu-\omicron\varsigma$, *hrin-d*, *srin-a*, 'horn-ed' etc. This in turn suggests a segmentation *-n + o-* for endocentric L. *cornum*, Gmc. *hurna-* etc. But not too much is learned even so, because within the general category of body-part terms, *-(e)n-* is perhaps the most common stem formant, playing various roles in formations that doubtless belong to very different chronological layers. These include: 1) primary inherited stems (e.g. oblique of neuter *r/n* stems *jekⁿ-n-* 'liver', *h₁(e)uHdh-n-* 'udder' etc.); 2) probably later "imitations" of these (e.g. Indic neuter oblique *asth-n-* 'bone', I-Ir. *ās-n-* 'mouth'); 3) *-en-* stem "extensions" of primary formations (e.g. Gmc. *hert-an-* 'heart' (Goth. *haiṛtō* etc.), mechanically extended from the root noun $\hat{k}(\bar{e})rd$ 'heart': Gk. $\kappa\acute{\eta}\rho$, L. *cor* etc.; Av. *nānh-an-* 'nose' extended in parallel fashion from *nāš-* 'nose' [*] RV instr. sg. *nas-ā-*; etc.); 4) apparent *-en-* stem extensions of some formations that are already very elaborate (e.g. Av. *mast-(ə)rəy-an-* 'brains, skull': *mes-t-ṛ-g-on-* [**]).

7.2 In theory, then, $\hat{k}(e)r-n-$ 'horn' can be interpreted in several ways, but no assumption is demonstrable:

1) It could reflect the oblique stem of a primary neuter *r/n* heteroclit. There is no evidence pointing in this particular direction.

2) It could reflect an oblique stem paradigmatically associated with a nom.-acc. neuter which lacks the *-en-* formant. That is, one is free to assume a paradigm $\hat{k}\acute{e}r/\hat{k}(e)r-n-$ 'horn' (n.), descriptively parallel to $h_2(e)\mu s-(e)s-/h_2(e)\mu s-(e)s-n-$ 'ear' (Gk. $\omicron\upsilon\varsigma$, Av. *uš-i* etc./Gk. $\omicron\upsilon\acute{\alpha}(\tau)-$, Arm. *un-(kn)* etc.). But there is no trace of the supposed nom.-acc. $*\hat{k}\acute{e}r$ (unless one wishes to take seriously the very doubtful Cretan $\kappa\acute{\alpha}\rho-\tau\eta\nu$ and assume that this is a mistake for $*\kappa\acute{\alpha}\rho-\tau\acute{\alpha}\nu$ analyzed $\hat{k}\acute{r}-te-h_2-$ 'horned'). Furthermore, it is questionable whether PIE itself ever had such paradigms. It is altogether possible that the direct ($\omicron\upsilon\varsigma/\omicron\upsilon\acute{\alpha}(\tau)-$;

Skt. *śīraḥ/śīrṣṇ-*: see below) and indirect (Av. *ast-/Skt. asth-n-*) indications of such paradigms that are to be found are the result of a certain amount of morphological and derivational independence of neuter oblique stems from their nominative-accusatives at least within the semantic field of body-part terminology and at least to the extent that the oblique cases may be built on a stem extended by an $-(e)n-$ that the nom.-acc. lacks. The formal model was, of course, always available in the r/n stems themselves, whose paradigms showed this independence from as far back as it is possible to make reasonable reconstructions. Semantically, it would then be no coincidence that $r/n-$ stems are well-represented among the primary body-part terms.

3) The same objections can be made to a hypothetical paradigm with $\hat{k}er-x$ ($x = u$ would be the most obvious choice) as the nominative-accusative and $\hat{k}er-n-$ oblique. This situation is in fact directly observable in such cases as Skt. *ākṣ-i/akṣ-ṇ-* 'eye' or *ástḥ-i/asth-n-* 'bone', but in no such case is it demonstrable, or even very likely, that the paradigm as such is inherited. It is thinkable that such a paradigm is the result of independent derivational histories for the oblique stem on the one hand and the nom.-acc. on the other. From time to time in (late) PIE and then in the individual dialects, heteroclisis in neuters within various semantic groups (most notably body-parts) may actually have spread. A closely related phenomenon is the appearance of relatively complex stems that are made up of suffixal elements which are themselves frequently found in neuter heteroclitic stems (e.g. Av. *mastrāyan-* 'above' or Gk. ἀστράγαλος 'vertebra; ball of the ankle joint; knuckle-bone' vs. ὀστᾰκός 'lobster' vs. ὄστρακον 'shell, pot, sherd', as if < $h_2est-g-g-f-o-$ vs. $h_2ost-ṇ-k-o-$ vs. $h_2ost-g-k-o-$). In such cases, the most probable historical account is an open question. It is far from clear whether these concatenations, ultimately based on primary formations (*mes-t-*, $h_2e/ost-$), ever went through a stage of actual heteroclitic inflection followed by further extensive derivation and contamination. In the first place, the added elements often have no function, and in addition, it would then be very difficult to see why certain primary heteroclitics ($r/n-$ stems for the most part) retain their original paradigmatic characteristics well into the historical period in various languages, while these others must be assumed to have undergone such rapid and complex (but functionless) derivation and contamination. Such considerations might well lead one to doubt that there ever actually was an r/n stem, e.g., *me/os-t-ṛ(g)/-n-* inflected as such (and cf. the *mes-t-i* of Skt. *mas-t-i-ṣ-ka-* 'marrow' and Toch. A *māśś-unt* 'id.'). It is difficult to

exclude, in a case like this, the possibility that here and there in this semantic category there were produced derivatives with heteroclitic-looking formants but without an actual heteroclitic ever having existed (at least in PIE itself). The creation of such stems would have to have depended upon certain very specific local analogical models which are perhaps not themselves fully recoverable in any given case.

For $\hat{k}(e)r-n-$ ‘horn’, then, it would be difficult to show conclusively either that there was a neuter $*\hat{k}er-\gamma/n-$ or that there was a “secondary heteroclitic” either of the type $*\hat{k}\tilde{e}r/\hat{k}(e)r-n-$ or of the type $*\hat{k}er-u/\hat{k}er-n-$ in PIE or in any IE language. But it is equally difficult to justify the assumption of a root noun $*\hat{k}er-$ extended by $-(e)n-$. Nor is there any evidence pointing specifically to a primary $-(e)n-$ stem instead (presumably animate: neuters with the simple suffix $-(e)n-$ seem to be practically nonexistent as a PIE type). In short, there is no shortage of theoretical possibilities, but the available evidence does not make any of them particularly attractive.

7.3 Beyond this, it might also be noted that several words for ‘horn’ are closely paralleled, in their formation, by words for ‘wing’. And in this context one could bring in the fact that ‘horn’ and ‘wing’ are the two most obvious paired body parts that belong to animals only. Clearly this ought not to be pushed very far. But, as will be further discussed below, Hittite *karāḫuar*, ‘Gehörn’ is matched by *partāḫuar*, ‘Flügel’ in this group, and Gaulish *ḫáqvυξ* (as if $\hat{k}\gamma-n-u-g-$) ‘horn’ (cf. also L. *cornu*) is reminiscent of Greek *πτέρυξ* (*pt-er-u-g-*) ‘wing’. By itself, neither of these correspondences is necessarily very suggestive. Somewhat more interesting is the observation that both the ‘wing’ and ‘horn’ forms in *-no-* are of two types. Each set includes both ‘mechanically’ thematicized forms and forms in which the thematic vowel has a function—that of marking a resulting $-n + o-$ formation as an exocentric derivative of an $n-$ stem. To $\hat{k}\gamma no-$ ‘horn’ (L. *cornum*, Celt. *ḫáqvov/carn*, Gmc. *hurna-*) can be compared *petno-* ‘wing’ (L. *penna*) and *porno-* ‘wing, feather’ (Skt. *paṇá-*, Av. *parəna-*, Lith. (s)*paṛnas*, OHG *farn*/OE *fearn* ‘fern’). On the other hand, $\hat{k}\gamma n-o-$ ‘horn-ed’ (Gk. *ḫáqvovos*, Latv. *siṛna*, Russ. *sīrna*) is parallel to Celtic *pet-n-o-* ‘wing-ed’ > ‘bird’ (OIr. *én*, W. *edn*) and Skt. *pet-en(g)-o-* ‘id.’ (RV + *patamgá-*). For the ‘wing’ forms there are clear possibilities for further analysis. In the first place there is an r/n stem *pot-γ/pet-(e)n-* (Hitt. *pattar/paddanaš*—and cf. L. (*acci*)-*pit*er ‘hawk’ and (*acci*)*petr-ina* ‘rapacity’). It is an exocentric thematic derivative of this formation that best accounts for

pet-n-o-/pet-en(g)-o- 'bird' (cf., in parallel fashion, from the *r-* stem, RV *pataṛ-á-* 'flying'). A *petnā-* 'wing' (insofar as L. *penna* requires this) could be mechanically "sexualized" (with *-ā-*) from the *n-* stem of the same *r/n* formation (cf. *columnen: columna*). But it might just as well represent a deverbative noun in *-no-/nā-* from the root *pet(h₂)-* 'fall, fly' itself (in which case cf. *μῆγḡh-no-* > OIr. *fén* 'wagon' or *preusijō* (> L. *prurio* 'burn'): *pr(e)us-nā* > *pruna* 'glowing coal'). The deverbative interpretation would gain some support if OL *pesna* (Fest.) reliably reflects a *pet-snā*, which would be of the type *lenk-snā* > *luna* 'moon'. For *por-no-* 'wing, feather' the analysis as a verbal noun is the one that comes to mind most immediately (*per-* 'traverse': *por-no-* 'wing' = *μῆγḡh-* 'convey': *μῆγḡh-no-* 'wagon' in Gmc. *wagna-*: OIc. *vagn*, OE *wægn* etc. Cf. also *μῆs-* 'sell': *μῆs-no-* in Gk. ὄνος, ὄνη, ὄννα 'price'). The fairly clear analyzability of *pet-(e)n-o-* 'winged' and *pet-no-/por-no-* 'wing', however, does not help much further in the interpretation of $\hat{k}r\text{-}n-o-$ 'horned' and $\hat{k}(e)r\text{-}no-$ 'horn', where there is neither a demonstrable *r/n* stem nor a verbal root. One might conclude that the morphological pattern displayed by 'wing' (and perhaps in part by a few other body part terms) has been transferred to 'horn', but this would be pure conjecture.

8.1 For the *u*-stem $\hat{k}(e)r\text{-}(e)\mu\text{-}$, the indications are more promising, even if only slightly so. The existence of such a formation with the meaning 'horn' is strongly suggested by the possessive derivatives in *-o-* mentioned before (§ 4). There proves to be evidence (direct or indirect) for a $\hat{k}er\mu\text{-}o-$ as well as $\hat{k}or\mu\text{-}o-$ (the putative derivational base of B-Sl. *kōrṁā*) and $\hat{k}r\mu\text{-}o-$. In general, it is dangerous to draw conclusions about the apophonic characteristics of a given substantive from the vocalism(s) shown by its derivatives. But in the present case, it may be noted that the formation of a possessive in *-o-* does not as a rule condition a secondary *e-* grade (much less an *o-* grade)²⁷ in the stem of the derivational base, and that there is consequently some chance of tracing the $\hat{k}er\mu\text{-}/\hat{k}or\mu\text{-}/\hat{k}r\mu\text{-}$ (with all possible caution) to the allomorphy of the underlying *u-* stem itself. The same might be said (even more hesitantly) for the forms that show the more obscure structures $\hat{k}erud\text{-}o-$ (OHG *hiruz* etc.) vs. $\hat{k}orud\text{-}o-$ (Gk. ὁρῦδος; cf. ὁρῦθ- etc. § 5).

Although no really solid result is obtainable here, one could go on to note that if the word for 'horn' in question was a *u-* stem body-part

²⁷ For *vrddhi* in genitival but not possessive derivatives in Vedic and elsewhere cf. W-D 2.2, 103 ff. and 136 ff.

term that did show a $\hat{k}oru-$ beside a $\hat{k}eru-$ (and perhaps a $\hat{k}ru-$ as well) in its own paradigm, it would be best paralleled by $\hat{g}onu/\hat{g}enu/\hat{g}nu-$ 'knee' (Gk. γόνυ, L. *genu*, Av. *žnubiias-*) and $\hat{s}onu$ 'back' (RV *sānu/snóḥ*). In other words, it might be conjectured that the $u-$ stem meaning 'horn' was a neuter $\hat{k}oru/\hat{k}eru/\hat{k}re\mu-/ \hat{k}ru-$ of the type $\hat{g}onu$ 'knee', $\hat{s}onu$ 'back', $\hat{d}oru$ 'wood'²⁸.

8.2 This, in turn, would immediately allow for at least a superficial parallel to the $\hat{k}rou-$ of Gk. δίρροος (§ 3.3). Beside $\hat{d}oru$ 'wood', there is some evidence of a stem $\hat{d}rou-$. A $\hat{d}rou-i\hat{o}-$ '(made) of wood' seems to lie behind Gmc. *traugia-* (OE *trīg* 'tray' etc.) and in Greek itself $\delta\rho\acute{o}\nu$ ἰσχυρόν. Ἀργεῖοι (Hesych.) points to $\hat{d}rou-\acute{o}-$ 'strong' and thus, descriptively, to a $\hat{d}rou-$ 'wood' (metaphorically 'strength, steadfastness'²⁹ etc.). Whatever the precise details of the relationship between $\hat{d}oru$ 'wood' and the apparently synonymous $\hat{d}rou-$ of these derivatives, our conjectural $\hat{k}oru$ 'horn' beside a $\hat{k}rou-$ would be perfectly parallel. One might then take δίρροος as ultimately reflecting a possessive $\hat{d}ui-\hat{k}rou-o-$ 'having two horns' with a compositional $-o-$.

8.3 Before leaving the potential Greek evidence of the $u-$ stem for 'horn', there is the question of whether this is related to the formation that appears as the second part of the adverbial $\acute{\alpha}\nu\tau\iota\kappa\acute{\rho}\acute{\upsilon}/\acute{\alpha}\nu\tau\iota\kappa\rho\upsilon\varsigma$ 'right opposite, straight on (to), openly'³⁰, which seems to contain $\acute{\alpha}\nu\tau\acute{\iota}$ plus a $-\hat{k}ru$ (with or without "adverbial" $-s$). The difficulty is that $\hat{k}or-u$ otherwise means only 'horn' (never 'head' and much less 'face' or the like). It would therefore seem better to refer the $-\hat{k}ru(-s)$ of this formation to the $\hat{k}er-u-$ 'body' that appears, further suffixed, in Slavic (OCS *črěvo*, $-a$ vs. *črěvo*, $-ese$, as if from a $\hat{k}er\mu-o-$ and/or $\hat{k}er\mu-es-$). OPr. *kēr-mens* also belongs here, and if the root involved is $(s)\hat{k}er-$ 'cut' (as is generally supposed—cf. Bernecker *SEW* 150, Vasmer *REW* 1.319 e.g.), these would all be derivatives originally meaning 'form, figure', a basic meaning that suits Greek $-\hat{k}ru(s)$ much better than does 'horn'. As a semantic parallel, one might mention $\hat{d}el-$ 'hew' (L. *dolare* etc.) beside $\hat{d}el-\mu\hat{a}$ 'form' (OIr. *delb*).

²⁸ So too Cowgill *EFL*², 148.

²⁹ Cf., e.g., E. Benveniste, *Le vocabulaire des institutions indo-européennes* I, 104 ff.

³⁰ Attic $\acute{\alpha}\nu\tau\rho\acute{o}\kappa\acute{\upsilon}$ (with $\acute{\alpha}\nu-$ and $\kappa\alpha\tau-$), found in inscriptions and apparently identical in meaning to $\acute{\alpha}\nu\tau\iota\kappa\acute{\rho}\acute{\upsilon}$, is not clear. It does seem unlikely, however, that it was metathesized from an $*\acute{\alpha}\nu\tau\rho\acute{o}\mu\upsilon$, because this itself is an unlikely-looking formation.

8.4 It remains to see whether the Avestan word for 'horn, nail, talon' (§ 3.2) allows for any more specifics concerning the apparent PIE u -stem that meant 'horn'. As already noted, the Avestan word shows both a stem $sruuā-$, and, less securely, a stem $sruu-/ *srū-$ (at best only in the nom.-acc. dual $sruu-i$). It may be noted, however, that the assumption of a stem allomorph $/sruu-/$ (as if from pre-vocalic $\hat{k}ru-h_2-$) could be a help in explaining the syllabification of the better-established $/sruuā-/$. A "normal" $\bar{a}-$ ($-eh_2-$) stem made on the u -stem seen elsewhere should have had the syllabification $\hat{k}rueh_2-$ (cf. $\hat{k}rūo-$ in W. *carw*, OPr. *sirwis*). But such a pre-form does not directly account for Av. $sruuā-$. If, on the other hand, the original paradigm of the Av. formation showed ablaut, and thus included both a $\hat{k}rū-ēh_2-$ and a $\hat{k}ru-h_2-$, its outcome (say at the Indo-Iranian stage) would have eventually been an irregular-looking $\acute{s}rūā-$ vs. $\acute{s}ruu-/ \acute{s}rū-$. This could have been levelled to Ir. $sruuā-$ ("normal" \bar{a} -stem), which would result from the generalization of the $\acute{s}ruu-$ allomorph on the one hand and the productive $\bar{a}-$ of $\acute{s}rūā-$ on the other. [*]

If so, only the nom.-acc. dual $sruuī$ ($\hat{k}ruh_2-iH$) would have escaped complete replacement by an \bar{a} -stem form of the banal kind, the dual $sruuīe/sruuāē$ (ča) being at most a newer competitor in this scheme. Such conservatism is not surprising, however, in the dual forms of a word that denotes a paired body part. One could compare OCS *očī*, the old root-noun dual 'two eyes' beside singular *oko/očese*, which is a (doubtless newer—§§ 57.6 ff) neuter s -stem.

Even with the reconstruction of a paradigm that alternated between $\hat{k}rū-eh_2-$ and $\hat{k}ru-h_2-$, it is not absolutely clear yet whether this should have been a hysterokinetic-looking $\hat{k}rū-ēh_2-/ \hat{k}ru-h_2-$ or a proterokinetic-looking $\hat{k}ru-h_2-/ \hat{k}rū-eh_2-$. The Avestan paradigm of a second body-part term, namely that of 'tongue', shows an acc. sg. *hizuuam*, but a gen. sg. *hizuuō*, an inst. sg. *hizuuā*, and an inst. pl. *hizubiš*³¹. The paradigm of 'tongue' therefore seems to have been a hysterokinetic $\bar{u}-ēh_2-/ -u-h_2-$. It might be reasonable to suppose that 'horn' was parallel to 'tongue', and we would then assume $\hat{k}rū-ēh_2-/obl. \hat{k}ru-h_2-$ as the starting point. Furthermore, the eventual generalization of $sruu-$ (from the pre-vocalic oblique $\hat{k}ru-h_2-$) throughout the 'horn' paradigm is matched by the generalization of *hizuu-* (from pre-vocalic oblique I-Ir. $\acute{z}(h)i\acute{z}hu-H-$) in that of 'tongue'. The regular outcome of I-Ir. $-\acute{z}huā-$ in Avestan would be $-zbā-$ (cf., e.g., Av. abs. *zbarəntəm* with the root of

³¹ Cf. Kuiper *Notes*, 175 f.

Skt. *hvárata* etc. < $\hat{g}h_{\mu}er-$). One would say that both paradigms generalized $-u_{\mu}$ - (from oblique $-u-h_2-$), but only the ‘horn’ paradigm shows the further innovation of generalizing (almost completely) the $-\bar{a}$ of the strong cases. [**]

If $sruu\bar{a}-$ goes back to a $\hat{k}r_{\mu}\bar{e}h_2-/kru-h_2-$, then $sruu\bar{i}$ is a fem. h_2 -stem nom.-acc. dual with the ending $-iH$. This, of course, is no problem in view of the situation in “normal” fem. \bar{a} -stems where the nom.-acc. dual (Skt. $-e$, Av. $-e$ < I-Ir. $-ai$) reflects $-eh_2-iH$. Moreover, the ending in $sruu\bar{i}$ (< $\hat{k}ru-h_2-iH$) appears with the stem allomorph proper to the oblique cases of the singular. This causes no real difficulty either. It seems to be an old feature of at least some fem. h_2 -stem duals in $-iH$. One may compare OIr. *ben* ‘woman’ < $g^{\#}én-h_2$; gen. *mná* < $g^{\#}n-éh_2-s$; du. *mnaí* < $g^{\#}n-eh_2-iH$ (cf. § 37.7). In both ending and stem ablaut, a fem. dual $\hat{k}ru-h_2-iH$ is therefore consistent with a hysterokinetic feminine h_2 -stem $\hat{k}r_{\mu}\bar{e}h_2-/kru-h_2-$. [***]

Even if this reconstruction is a reasonable source for Av. $sruu\bar{a}-/sruu-$, however, it provides grounds for very few further conclusions concerning the basic u -stem meaning ‘horn’. The only thing that seems fairly certain is that the formation reflected in Avestan is a functionally endocentric derivative (in $-(e)h_2-$) of this u -stem. One might think more specifically of a collective, recalling that some of the dual forms may denote ‘both sets of nails’ (§ 3.2). But this is not even true of all the dual forms, inasmuch as *sruie* (Yt. 14.7) simply means ‘the two horns’ (of a cow). Likewise, the plural *sruuá* (once nom., once acc.) means ‘talons’ (of a bird), not several sets. In addition, the closest formal parallel to $sruu\bar{a}-/sru-$, as just noted, seems to be $hizuu\bar{a}-/hizū-$ (masc.) ‘tongue’, whose derivational history is completely unclear, and which offers no indication that would favor interpreting it as a collective. The gender of $hizuu\bar{a}-/hizū-$, if old, would also be remarkable in a collective. Here we must leave the matter, since the present discussion cannot accommodate a study of the possible functions of secondary, denominative $-(e)h_2-$.

8.5 Finally, a stem $\hat{k}ru-h_2$ - ‘horn’ could also be the ultimate basis of OIc. *hrútr* ‘ram’, as if < $hrūta-$ < $\hat{k}ruh_2 + d-o-$. This would then have the same $-d-$ formant as OHG *hiruz* (< $\hat{k}eru + d-o-$) and Gk. $\kappaόρυθος$ (< $\hat{k}oru + d-o-$ § 5), but this time affixed to $\hat{k}ruh_2-$ rather than simple $\hat{k}eru-$ and $\hat{k}oru-$ ³².

³² On the other hand, it might be possible to explain *hrútr* as a late apophonic rearrangement—So Noreen *Gramm.*, § 172 note 3.

8.6 To sum up, it seems that there was a $-n(o)-$ stem for 'horn' made on $ani\hat{t} \hat{k}(e)r-$, but further specifics concerning this formation are not recoverable from the evidence available. The parallelism between these forms and various formations meaning 'wing', however, is striking and may be significant (§ 7). There is also a $u-$ stem made on $ani\hat{t} \hat{k}(e)r-$, and in this case there is at least some chance that it was a neuter $\hat{k}óru$ 'horn' parallel to $\hat{g}ónu$ 'knee' etc. (§ 8).

II a. $\hat{k}(e)r-(e)h_2$ - 'horn'

9.1 When we turn to the remaining formations in the 'head'/'horn' group, we find that none of them show the formal and semantic characteristics that were common to all the forms that we have been looking at so far. In the next group of formations,

- 1) a laryngeal is reflected in all cases that are not ambiguous,
- 2) but it is never followed by the $-n(o)$ - and $-u$ - formants that appeared with *aniṭ* $\hat{k}(e)r$ -.
- 3) Hand in hand with this goes a semantic difference: the formations reflecting $\hat{k}(e)r(e)h_2$ - do not consistently mean either 'horn' or 'head'. At the very least, therefore, it is possible to localize the semantic unpredictability. Only the formations based on $\hat{k}(e)r(e)h_2$ - (whatever its further analysis) have both meanings.

9.2 Before attempting to determine the reason for this basic difference in semantic domain between $\hat{k}(e)r(e)h_2$ - on the one hand and $\hat{k}or-u$ - and $\hat{k}(e)r-n(o)$ - on the other, it might be useful to define more closely the kind(s) of solution that would, in principle, be acceptable and desirable. To do this, it will be necessary to give a rough outline of the data relevant to the reconstruction of a stem $\hat{k}(e)r(e)h_2$ -, but without the details of their evaluation that will occupy us below. Anticipating somewhat, the forms (or some of them) that will have to be dealt with are:

1. a. $\hat{k}(e)r(e)h_2$ - 'head' e.g. Gk. $\kappa\acute{\alpha}\rho\tilde{\alpha}$ 'head', Hitt. (*kit*)*kar* 'at the head (here)'
 b. $\hat{k}(e)r(e)h_2$ - 'horn' e.g. Hitt. *karā(yar)* 'horn(s)'
2. a. $\hat{k}(e)rh_2-es$ - 'head' cf. Ved. *śíras*-/Av. *sarah*- 'head'
 b. $\hat{k}erh_2-s$ 'horn' cf. Gk. $\kappa\acute{\epsilon}\rho\alpha\varsigma$ 'horn'
3. a. $\hat{k}(e)rh_2-s-r(o)$ - 'head'¹ e.g. L. *cerebrum* 'brain, skull', Gk. $\eta\mu\acute{\iota}-\kappa\epsilon\rho\alpha\iota\rho\alpha$ 'half the head'
 b. $\hat{k}rh_2-s-r(o)$ - 'horn' e.g. L. *crabro* 'hornet', Gk. $\acute{o}\rho\theta\acute{o}-\kappa\epsilon\rho\alpha\iota\rho\alpha$ 'straight-horned'

¹ But cf. Part IV (§§ 60 ff.).

4. a. $\hat{k}(e)rh_2-s-n$ - 'head' e.g. Ved. $\acute{s}ĩṛṣṇ$ - 'head', Gk. $\kappa\rho\alpha\nu$ - $\acute{\iota}\omicron\nu$ 'crown', OIc. $hjarsi$ 'crown'
 b. $\hat{k}ṛh_2-s-n$ - 'horn'², perhaps Lith. $\acute{s}ĩrṣũõ$ 'hornet' etc.

This classification is purely descriptive, intended only to summarize the problem. In addition, it may be noted that the r - (no. 3) and n - (no. 4) formations have traditionally been combined by means of a reconstructed heteroclitc neuter r/n stem.

9.3 At the very outset, two kinds of interpretation of this situation come immediately to mind. On the one hand, emphasizing the persistence of the meaning 'horn' among the $\hat{k}or-u$ and $\hat{k}(e)r-n(o)$ - forms, one could certainly conclude that 'head' and 'horn' were never conceived to be the same thing in PIE. On this basis, one could go on to argue that pairs like Hitt. $karā(\underline{u}ar)/(kit)kar$ or Gk. $\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$ /Ved. $\acute{s}ĩras$ - or L. $crabr(o)/cerebr(um)$, although their stem formants may be superficially identical, actually represent the results of parallel but separate derivational processes. With this approach, Hittite $-kar$ and $karā$ -, for instance, both reflect h_2 - stems, but two different ones—with two different derivational histories, two different paradigms and two different meanings. Nor is it impossible to produce a hypothesis that could accommodate such a state of affairs. In parallel fashion, $\hat{k}ṛh_2-os$ ($\acute{s}ĩras$ -) and $\hat{k}érh_2-s$ ($\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$) would be two neuter s - stems formed independently of one another, and the semantic distinction between them no longer necessarily a problem. Finally, this method (in its most consistent form anyway) might lead to the reconstruction of two distinct r/n -stems or the like lying behind $cerebr(um)/\acute{s}ĩṛṣṇ$ - on the one hand and ($\delta\rho\theta\acute{o}$ -) $\kappa\rho\alpha\iota\rho\alpha/\acute{s}ĩrṣũõ$ on the other. A hypothesis like this (or parts of it) could be supported by showing (on grounds other than the semantic considerations themselves) that there is reason for reconstructing one or more such pairs—i.e. by showing on morphological grounds that Hitt. $-kar$ and $karā$ -, for example, or Ved. $\acute{s}ĩras$ - and Gk. $\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$, are not likely to be the divergently levelled outcomes of one and the same PIE paradigm.

9.4 Although not carried out in quite so single-minded a fashion, the approach just outlined was the one taken in the previous version of this study (cf. Preface). It quickly began to seem unsatisfactory, however, because of several drawbacks:

² But cf. Part V (§§ 73 ff.); also Peters *Untersuchungen* 243, but with note 195.

1) There is not a great deal of explanatory power to a hypothesis that accounts for every substantival stem that shows up meaning both 'head' and 'horn' by reconstructing an entire paradigm for each stem in each meaning.

2) It is uneconomical, possibly requiring as many as six paradigms (two h_2 - stems, two s - stems, two r/n - stems).

3) There is also a second way in which it lacks economy. It requires the assumption of a stem X meaning 'head'; plus an $X + (e)s$ -, also 'head'; plus $X + (e)s + r/n$, a third word for 'head', all of PIE date and with no apparent difference in meaning. Moreover, an analogous state of affairs is assumed thereby for the various 'horn' formations reflecting (or based on) $\hat{k}(e)r(e)h_2$ -.

4) The scheme is also suspiciously pat and over-symmetrical. It suggests that comparable formations (e.g. $\kappa\acute{\alpha}\rho\alpha$ and $kar\bar{a}(u)r$)-both h_2 - stems) would somehow be predisposed to make comparable further derivatives (e.g. $\acute{\sigma}\acute{\iota}r\alpha$ - and $\kappa\acute{\epsilon}\rho\alpha\varsigma$), and that these in turn would do likewise (whence *cerebrum* and $\acute{\omicron}\rho\theta\acute{\omicron}$ - $\kappa\rho\alpha\iota\mu\alpha$ etc.)

5) The reconstruction of the r/n stem(s) is particularly problematical:

a) It is difficult to parallel the use of simple $-r/n$ - as a purely denominative³ secondary (or tertiary) endocentric derivational suffix at all, and especially if the formation so interpreted is to be attributed to PIE itself.

b) No $\hat{k}(e)r h_2 s-r/n$ - is actually found inflecting as such in any IE language⁴, and taking such a formation as the starting point makes it

³ Cf. § 54.3, where it is admitted as a possibility, for the sake of argument, that $h_2\acute{e}rh_3u\acute{r}/-u\acute{e}n$ - (Gk. $\acute{\epsilon}\rho\omicron\upsilon\rho(\alpha)$ /Arm. *harawornk**) and $sn\acute{e}h_1u\acute{r}/-u\acute{e}n$ - (Av. *snāuuarə*/Ved. *snāvan-*) might be segmentable ($h_2\acute{e}rh_3u-r/n$ -, $sn\acute{e}h_1u-r/n$ -) from the historical point of view. But see also the addendum to § 54.3, which emphasizes the tenuousness of this assumption in the case of $h_2\acute{e}rh_3u\acute{r}$. But even if these two $-u\acute{r}/-u\acute{e}n$ -stems really were made simply by adding $-r/n$ - to pre-existing u -stems, the resulting formations were presumably favored, and perhaps even partly motivated, by their being, when all is said and done, verbal abstracts to their respective roots. There is no trace of verbal forms to $\acute{k}er$ -. Beside Arm. *oskr* (as if < $h_2ostu\acute{r}$) the evidence for a u -stem is feeble (MW *assen*?) or illusory (L. *ossua*).

⁴ Not in Hittite either, despite the suggestion of Peters *Untersuchungen*, 230, note 176 a that a PIE $\hat{k}(e)r h_2 s\acute{r}/-sen$ - first became *karḥšar/-šanaš* in Hitt., then assimilated to **ḥarḥšar*, and finally underwent dissimilatory loss of the second h , yielding *ḥaršar* 'head'. On the one hand, the assumption of dissimilation of two identical consonants that are only identical because of an assimilation in the first place is a weak and unveri-

difficult to arrive at either the Gk. paradigm ($\kappa\acute{\alpha}\rho\alpha/\kappa\rho\acute{\alpha}\eta\alpha\tau$ -) or the Vedic paradigm ($\acute{s}irah/\acute{s}irṣṇ$ -) for 'head'. One would have to suppose not only that Greek and Vedic both collapsed two paradigms into one ($-h_2$ - stem with $-h_2 + s + r/n$ - for Gk., $-h_2 + s$ - with $-h_2 + s + r/n$ - for Vedic), but also that they did so independently, and in such a way that the resulting paradigm in each language is completely unique in that language (cf. IIIc.).

c) The reconstruction of a tertiary r/n stem here is disfavored by the general morphological tendencies of the relevant semantic category. In a fair number of cases, neuter body-part terms in particular may acquire n - stem obliques without an r - stem nom.-acc. (type h_2est-n - 'bone' cf. § 7.1). And if the neuter oblique $\hat{k}rh_2sn$ - 'head' is never really found with a nom.-acc. in $-r$, it seems worthwhile at least to consider the possibility that this oblique $\hat{k}rh_2sn$ - ($\acute{s}irṣṇ$ -, $\kappa\rho\acute{\alpha}\alpha\tau$ -) 'head' is of the type h_2estn - 'bone'.

d) It will be suggested below that there is no reflex anywhere of a $\hat{k}(e)rh_2sr$ - as such that means 'head' (IV), nor a $\hat{k}rh_2sn$ - that means 'horn'. If not, then the nom.-acc. of an r/n - stem for 'head' has no reflexes, and the same can be said of the oblique of an r/n - stem for 'horn'.

9.5 For reasons such as these, the previous proposals regarding the double meaning of $\hat{k}(e)r(e)h_2(s)(r/n)$ - have been abandoned. To be sure, there was always a second obvious approach available. Namely, one could simply suppose (with or without further hypotheses) that any given formation in $\hat{k}(e)r(e)h_2$ - (or based on this) was able and even liable to have (or acquire) both the meaning 'horn' and the meaning 'head' from the beginning. In this case, there would be no morphological reason for the semantic distinction between Gk. $\kappa\acute{\epsilon}\rho\alpha\varsigma$ and Ved. $\acute{s}iras$ - or even Hitt. $kar\bar{a}(uar)$ and $(kit)kar$. One would say that the forms with $\hat{k}(e)r(e)h_2$ - simply differed in this respect from those reflecting $\hat{k}or-u$ and $\hat{k}(e)r-n(o)$ -, which only mean 'horn'.

The situation that would be most favorable to this view would be one in which

fiable hypothesis. In addition, the r/n -stem supposed for $\hat{h}ar\acute{s}ar$ would itself be only a Hittite creation if, as at least seems possible, $\hat{h}ar\acute{s}ar$ 'head' belongs with DUG $\hat{h}ar\acute{s}i$ - 'pithos' (whether or not it shows the semantic development seen, e.g., in Latin *testa* 'pot, jug' > It. *testa* 'head' etc.). Another Hittite r/n -less formation that could belong with $\hat{h}ar\acute{s}ar$ is $\hat{h}ar\acute{s}-umna$ - 'headstreams, headwaters', to which cf. L. *caput* in the sense 'source' (Lucr. +).

1) some account could be given of why it is that the $\hat{k}(e)r(e)h_2$ -formations should have a larger semantic domain than $\hat{k}or-u$ and $\hat{k}(e)r-n(o)-$;

2) there could be no objection on morphological grounds to seeing $\kappa\acute{\epsilon}\rho\alpha\varsigma$ and $\acute{\sigma}\acute{\iota}\rho\alpha\varsigma$, for example, or $\bar{k}ar\bar{a}(u)r$ and $(kit)kar$ as coming from a single reconstructed paradigm;

3) it could be shown that practically all the formations in question do in fact turn up with both meanings.

9.6 This way of going about giving an account of the $\hat{k}(e)r(e)h_2$ -forms and their semantics is the one taken recently by M. Peters (*Untersuchungen zur Vertretung der idg. Laryngale im Griechischen*)⁵ in a discussion of the relevant data in Greek. The basic elements of Peters' proposals are:

1) Greek inherited a proterokinetic feminine h_2 -stem $\hat{k}erh_2/\hat{k}reh_2-s$ (p. 232), a neuter s -stem derivative $\hat{k}erh_2es-$ (pp. 231, 232), and a neuter r/n stem $\hat{k}érh_2-s/\hat{k}ṛh_2-s-én-$ (pp. 229–30, 235 ff.) as well.

2) They could all have or acquire the meaning 'head' as well as 'horn' (pp. 230, 231, 242)⁶.

3) The fem. $\hat{k}erh_2/\hat{k}reh_2-s$ (cf. no. 1 above) generalized the longer Lindeman's Law variant of the oblique ($\hat{k}ṛeh_2-$), and thus became $\bar{k}ar\bar{a}/$

⁵ Peters *Untersuchungen* 238–86. In May of 1981, a few days after the completion of the draft of this revision (cf. Preface), I was able to see a copy of Martin Peters' monograph. I definitely did not wish to ignore Peters' views, but I was at that point simply unable to recast large sections of the draft in such a way that his proposals might be taken account of each in its proper place in my own organization of the discussion. For this reason, I adopted a compromise solution. Here in § 9.6 has been inserted a systematic, if rather general, summary and discussion of Peters' point of view on the matters on which our interests overlap. In the remainder of the work, I have taken note of some of the more specific points by adding footnotes and substituting new ones for footnotes already planned. I have not, however, made an attempt to refer to Peters on every single point about which both he and I have had something to say. In particular, any views expressed in the 1976 version (cf. Preface), but subsequently altered or abandoned by me, and then objected to by Peters have in general been simply considered moot points here, and so passed over in silence.

⁶ In the 1976 version (cf. Preface), it was supposed (345 f.) that a h_2 -stem collective meaning 'bony substance of, in, or on the head' might adopt the meaning 'skull' in one language and the meaning 'Gehörn' in another. But never was there any suggestion that it had or acquired *both* these meanings either in PIE or any IE language. And in any case, it would not follow that the more complex ($-s-$ and $-s-r/n-$) formations should also simply be endowed with two meanings.

karās etc. in Gk. (p.232)⁷. This feminine eventually became neuter, however (pp.231, 242; cf. no.6 below), and was semantically specialized in the direction 'head'.

4) the neuter $\hat{k}erh_2s/\hat{k}erh_2es$ - 'head; horn(s)' is continued in Gk. by $\kappa\acute{\epsilon}\rho\alpha\varsigma$, semantically specialized in the other direction—'horn' (pp.231, 232).

5) The neuter *r/n* stem became $\hat{k}r\hat{h}_2s/\hat{k}r\hat{h}_2sn\acute{o}s$ and eventually proto-Gk. *kárahār* (*krāhār*)/*krāhā/at*- 'head; horn(s)' (pp.244 ff.), and the double meaning for this paradigm was kept in Gk. for as long a time as it continued to inflect as an *r/n* stem (p.242).

6) At a certain point, however, this *r/n* stem (still with both meanings) split into two paradigms (p.242). On the one hand, nom.-acc. *krāhār* served as the starting point for the creation of a neuter *r*- stem paradigm which was restricted to the meaning 'horn(s)' (p.242). This (new) lexical item is most directly reflected by the Mycenaean *-karaor*- compounds (which are determinative—pp.235 ff.—e.g. *seremo-karaore* 'with *seremo*-horn(s)' cf.IV). On the other hand, oblique *krāhat*- was restricted to the meaning 'head' (p.242) and, now lacking a nom.-acc., was supplanted in this meaning by the nom. sg. of the old fem. (cf. no.3 above) *karā*, which became neuter and was analogically introduced as acc. sg. as well—thus nom.-acc. *karā*/oblique *krāhat*- (p.242).

7) Forms like $\nu\acute{\alpha}\upsilon\text{-}\kappa\rho\acute{\alpha}\rho\omicron\varsigma$ 'captain (of a division of citizens)' are determinative compounds with a second member $\text{-}\kappa\rho\acute{\alpha}\rho\omicron\varsigma$, which itself is a "sexualized" form (with *-o-*) of the *n.-a.* of the original *r/n* stem (p.242); and it may be assumed that these compounds (or their models) were formed before the neut. *r/n*- stem nom.-acc. in *-r* was restricted to the meaning 'horn(s)' (p.243)⁸. Similarly, the semantic distinction

⁷ $\kappa\rho\acute{\alpha}\sigma\text{-}\pi\epsilon\delta\omicron\nu$, $\kappa\rho\eta\sigma\text{-}\phi\acute{\upsilon}\gamma\epsilon\tau\omicron\nu$, and $\kappa\rho\alpha\sigma\text{-}\tau\acute{\eta}\rho\iota\alpha$ contain the old gen-abl $\hat{k}r\text{-}eh_2\text{-}s$ according to Peters (*Untersuchungen*, 232 ff.), and $\kappa\rho\alpha\iota\pi\acute{\alpha}\lambda\eta$ the old loc. $\hat{k}r\text{-}eh_2\text{-}i$ (*Untersuchungen*, 234 with further reference to Frisk *GEW* 3,136). Because of the correspondence of $\kappa\rho\acute{\alpha}\alpha\tau\text{-}$ to Ved. $\acute{s}r\acute{h}n\text{-}$, however, one may doubt that the h_2 -stem oblique forms that once belonged with (the ancestor of) $\kappa\acute{\alpha}\rho\alpha$ survived long enough to be put into compounds and derivatives of clearly Greek date (see IIIc.). On $\kappa\rho\alpha\iota\pi\acute{\alpha}\lambda\eta$, in any case, cf. § 24.1; on $\kappa\rho\eta\sigma\phi\acute{\upsilon}\gamma\epsilon\tau\omicron\nu$ § 24.5. If $\kappa\rho\acute{\alpha}\sigma\text{-}(\pi\epsilon\delta\omicron\nu)$ and $\kappa\rho\alpha\sigma\text{-}(\tau\acute{\eta}\rho\iota\alpha)$ have anything to do with $\kappa\acute{\alpha}\rho\alpha$ at all, it would in any case seem possible (and safer) to see the $\kappa\rho\acute{\alpha}\sigma\text{-}$ as an adverbial formation—e.g. $\xi\gamma\kappa\alpha\tau\text{-}$ 'entrails': $\epsilon\gamma\kappa\acute{\alpha}\varsigma$ 'deep within' = $\kappa\rho\acute{\alpha}\alpha\tau\text{-}$: $\kappa\rho\acute{\alpha}\alpha\varsigma$ (> $\kappa\rho\acute{\alpha}\sigma\text{-}$; cf. $\kappa\rho\acute{\alpha}\alpha\tau\text{-}$ > Attic $\kappa\rho\acute{\alpha}\tau\text{-}$); less directly could be compared $\acute{\alpha}\gamma\kappa\acute{\omega}\nu$ '(crook of the) arm': $\acute{\alpha}\gamma\kappa\acute{\alpha}\varsigma$ 'in(to) the arms'.

⁸ If I understand this point correctly, it is that a derivative of the *r/n*-stem (with two meanings) was itself capable of having both meanings and could become semantically

between (ὀρθό-)κραιρα '(straight-)horned' and (ἡμί-)κραιρα '(half-)head' can be accounted for by assuming that the preform of -κραιρα originated before the paradigmatic and semantic split of the r/n stem for 'head; horn(s)' (pp.249 f.).

8) On the other side, the outcome of the original oblique $\hat{k}rh_2sn$ - was restricted to the meaning 'head' after the paradigm split (so κρᾶατ-'head', κάρην-α 'heads, peaks', κραν-ίον 'skull, head' etc., p.246)⁹.

9) Of the two paradigms that result from the split of the original r/n stem, $krāhar/-aros$ 'horn' is found only in Myc. -karaor-, while $karā/krāhā/at-/kārahna$ lasted longer and are found in post-Myc. poetic language(s).

9.7.1 An approach of this sort has an inherent advantage over the one described earlier (§ 9.3). It is more economical in that it operates with only three paradigms: a $-h_2$ - stem, a $-h_2 + s$ - stem, and a $-h_2 + s + r/n$ - stem.

But in other respects there is no improvement. We still have three separate formations (cf. § 9.4 no.3), all attributed to PIE, and each a derivative (or rather an expansion) of the last, which are virtually synonyms. And they are synonyms in the special sense that they are simply endowed with (or said to acquire) either the meaning 'head', or the meaning 'horn', or both in any given case. These three paradigms coexist until they undergo semantic specialization in the individual languages. Quite apart from the semantics, this remains uneconomical, and a solution that did not presuppose so many formations for the starting point would be preferable (at least in this respect) if one could be found.

9.7.2.1 An r/n - stem of the sort envisioned in the account summarized in § 9.6 does not meet the general objections already made (§ 9.4, no.6 a, b, c) to this reconstruction. More particularly, there are two points to be made here.

The first concerns the basis for the r/n - stem. It is explicitly stated by Peters that this reconstruction is to be adopted because

specialized in either direction—regardless of the direction of the semantic specialization undergone by its derivational basis.

⁹ Peters does mention as a possibility (243 note 195) that Hsch. καρανὼ τὴν αἶγα might point to a $\hat{k}rh_2sn$ - in the meaning 'horn', but also proposes an alternative explanation of the form. Cf. § 49.6 c note 21 below.

a) the stems $\hat{k}(e)rh_2s(e)r-$ and $\hat{k}(e)rh_2s(e)n-$ are both found with meanings in the 'head'/'horn' area (pp. 228–30);

b) an $r-$ stem which is neither a root noun nor a formation in $-ter-$ is necessarily neuter, and more specifically the nom.-acc. of a heteroclit in r/n (pp. 185, 229).

The second of these statements cannot be maintained (cf. §§ 67, 68)¹⁰. The first of them is, of course, a descriptive fact, but there is little reason to combine the $r-$ stem with the $n-$ stem by way of a heteroclit once it is made clear (IIIb, IV) that they are in semantic complementary distribution with one another. The $n-$ stem, found in several branches, never means anything but 'head' while the $r-$ stem, found as such only in Greek, never simply means 'head'.

9.7.2.2 It is also still difficult to begin with an $r/n-$ stem and arrive at the actual Greek and Vedic paradigms for 'head', since this requires the independent formation of two unique suppletive paradigms. The difficulties increase as soon as the actual details of these hypothetical developments begin to be dealt with:

a) For Vedic, what is particularly troublesome is the combination of two propositions:

1) that the 'head' paradigm is made up of the nom.-acc. of a formerly full $s-$ stem paradigm and the oblique of a former $r/n-$ stem;

2) that the $s-$ stem in question lies behind both Ved. *śírah* and Gk. *κέρας*.

If the Ved. and Gk. $s-$ stems are to be united, it should almost certainly be by way of a paradigm $\hat{k}erh_2-s/\hat{k}erh_2-s-es$ etc., or at most a $\hat{k}erh_2-s/\hat{k}erh_2-es-es$ etc. Neut. s -stems formed already in PIE with a structure $CeRH-$ or $CeyH-$ before the $-(e)s-$ suffix do not seem to have acquired a nom.-acc. in $-os$ at an early stage (cf. Gk. *γέρας* 'perquisite', *κέρας* itself, *κρέας* '(piece of) flesh' = RV *kravíh*, Av *təuuiš* 'strength', and *stairiš* 'layer of straw'; and also see § 41.2 below). [*] If one starts from the first of the alternatives above (invariant $\hat{k}erh_2-s-$), there is no source for the $-as$ of *śírah*. Combining the Gk. and Vedic s -stems therefore requires the second (with $-s/-es-$ suffix ablaut),

¹⁰ Peters himself reconstructs a PIE r -stem $h_2usér$ (> *ἄηρ* cf. *ἦρ*, *ἥρως*) on p. 34 and a $h_2idhér$ (*αἰθῆρ*) on 78 f. Masc. and fem. forms of r -stem adjectives also constitute r -stem forms that are neither root-stems nor kinship terms nor agent nouns but still are not neuter r/n -stem nom.-accusatives. Here would belong PIE $k^wet̥hor-es$ 'four', and in Gk. itself *μάκαρ*. In any case, cf. § 68.

although this is not demonstrable, strictly speaking, for the group of formations in question. But in any case, it certainly means that the zero grade of $\acute{s}irah_2$ is an innovation, presumably amounting to the generalization of the zero grade reflected in $\acute{s}ir_2\eta$ -¹¹.

This, in turn, requires that the generalization occurred before the laryngeals of the pre-forms were lost, and therefore that the suppletive paradigm was also created before the elimination of h_2 . For in order to assume the levelling with which we are now operating, it would certainly be a prerequisite that the suppletive paradigm had already come into existence (and that the oblique s - stem forms had already been eliminated) when the levelling occurred. The substitution of zero for full grade root vocalism in a neuter s - stem which was still inflectable as an s - stem throughout is much less likely to have occurred.

After the establishment of a suppletive paradigm $\hat{k}erh_2-s/\hat{k}r_2h_2-s-n$ -, we may possibly explain the introduction of $\hat{k}r_2h_2$ - (or $\acute{s}r_2H$ -) into the nom.-acc., but now there is no source of the required $-os$ (or $-as$) of the nom.-acc. that may be safely invoked. We might be able to get as far as a $\hat{k}r_2h_2-s/\hat{k}r_2h_2-s-n$ - ($\acute{s}r_2Hs/\acute{s}r_2Hs-n$ -), but there is no reason why this would not simply be kept (cf. $dóh/dos_2\eta$ - 'forearm', $yūh/yūs_2\eta$ - 'soup').

This necessitates further complexities. We must now say that $\hat{k}erh_2-s/\hat{k}erh_2-es$ - first became $\hat{k}erh_2-os/\hat{k}erh_2-es$ - (or $\acute{s}arH-as/\acute{s}arH-as$ -) -i.e. a 'normal' neuter s - stem. Only then was the suppletive paradigm formed (and the obliques of the s - stem eliminated). The resulting $\hat{k}erh_2-os$ ($\acute{s}arH-as$)/ $\hat{k}r_2h_2-s-n$ - ($\acute{s}r_2H-s-n$ -) then generalized root zero grade. Now the account depends on one indemonstrable premise: the starting point $\hat{k}erh_2-s/\hat{k}erh_2-es$ -; and one unlikely one: the early transformation of the original paradigm to $\hat{k}erh_2-os/\hat{k}erh_2-es$ - or $\acute{s}arH-as/\acute{s}arH-as$ -, which is at least exceptional in view of $stairi\acute{s}$, $t\acute{a}uui\acute{s}$, $krav\acute{i}h/\kappa\rho\acute{\epsilon}\alpha\varsigma$ as above. Even if it is thought possible that some $CeRH-s$ formations were remodelled to normal $-as$ - stems in I-Ir. or Indic, this is not likely to have happened until laryngeals had been eliminated. If $CeRH-s$ ($Ce\eta H-s$) formations were liable to normalization before this, it is difficult to explain the existence of a special $CeRH-s/Ce\eta H-s$ type in the first place. After laryngeal loss, one could at least invoke the irregular look of an I-Ir. $CaR\acute{a}-s/CaR-as$ - (if indeed this even existed) and the coincidence of the oblique structure with that of s - stems from CaC - roots.

It would therefore seem that even if one gives this scheme the benefit of every doubt, it leads to self-contradiction when the details are

¹¹ So Peters *Untersuchungen*, 231. Also Schmidt *Neutra*, 364.

worked out. On the one hand, it seems most acceptable if the introduction of *-os* (*-as*) into the *n-a* of the *s-* stem $\hat{k}erh_2-s$ ($\kappa\acute{\epsilon}\rho\alpha\varsigma$) precedes the formation of a suppletive paradigm and if this, in turn, precedes the laryngeal loss. But at the same time, the remodelling of the *n-a* (the first development), if it is to be assumed at all, can be best maintained if it follows laryngeal loss (the third development). It would seem worthwhile to try a different approach to the Vedic paradigm altogether.

b) As the starting point for the Greek paradigm of 'head', an *r/n* stem is still more problematical. If $\kappa\acute{\alpha}\rho\alpha$ goes back to a fem. $\hat{k}erh_2/\hat{k}reh_2-$ (§ 9.6 nos. 1, 3) which first gave rise to a fem. $\kappa\acute{\alpha}\rho\tilde{\alpha}/^*\kappa\acute{\alpha}\rho\tilde{\alpha}\varsigma$ etc., and if oblique $\kappa\rho\tilde{\alpha}\alpha\tau-$ is originally the oblique of a neut. *r/n* stem that has been disengaged from its old nom.-acc. by a paradigmatic and semantic split (§ 9.6 no. 6), then the situation that immediately preceded the formation of the suppletive paradigm $\kappa\acute{\alpha}\rho\tilde{\alpha}/\kappa\rho\tilde{\alpha}\alpha\tau-$ was a fem. $\kappa\alpha\rho\tilde{\alpha}/^*\kappa\alpha\rho\tilde{\alpha}\varsigma/^*\kappa\alpha\rho\tilde{\alpha}/^*\kappa\alpha\rho\tilde{\alpha}\nu$ which meant (or could mean) 'head' beside a neut. obl. $\kappa\rho\tilde{\alpha}\alpha\tau-$ which also meant 'head', but lacked a nom.-acc.

Under these circumstances, it is difficult to see any explanation for the failure of the perfectly normal and viable fem. \tilde{a} - stem simply to take over as the word for 'head'. And this becomes especially difficult if the formation of the suppletive paradigm is to have involved the switch of an \tilde{a} - stem from fem. to neut. Changes in gender definitely do occur, but the connection between \tilde{a} - stems and feminine (or at least non-neuter) gender is so automatic¹² that it is hard to imagine (and impossible to parallel) the switch of an \tilde{a} - stem from fem. to neut. – particularly if, in this case, there must have been the alternative of simply keeping the paradigm ($\kappa\alpha\rho\tilde{\alpha}/^*\kappa\alpha\rho\tilde{\alpha}\varsigma$ etc.) whose gender and inflection were synchronically perfectly in order, and supported by a virtual synonym in the same morphological category ($\kappa\epsilon\phi\alpha\lambda\acute{\eta}$). If anything, the neuter gender of $\kappa\acute{\alpha}\rho\tilde{\alpha}$ is a reason for seeing the formation that it reflects as neuter from the first. It remains to be seen whether an eventual neuter \tilde{a} - stem can be accounted for in PIE terms better than in Greek.

c) For both Greek $\kappa\acute{\alpha}\rho\tilde{\alpha}/\kappa\rho\tilde{\alpha}\alpha\tau-$ and Vedic $\acute{s}ir\acute{a}s/\acute{s}ir\acute{a}n-$, it may be pointed out that assuming the formation of a suppletive paradigm out of two originally independent ones does not in itself furnish any explanation for the disappearance of the full inflection of the paradigm that suppletes (in the nom.-acc.) the defective *n-* stem $\hat{k}r_h_2sn-$ (oblique only). In the Vedic word for 'mouth', for example, the stems $\tilde{a}s-$ and $\tilde{a}s-$

¹² $\kappa\acute{\alpha}\rho\eta$ itself eventually is used as a feminine (e.g. $\tau\eta\varsigma \kappa\acute{\alpha}\rho\eta\varsigma$ Call.).

n- form oblique cases only (RV inst. $\bar{a}s-\acute{a}/\bar{a}s-n-\acute{a}$, g-abl. $\bar{a}s-\acute{a}s/\bar{a}s-n-\acute{a}s$, dat. $\bar{a}s-n-\acute{e}$, loc. $\bar{a}s-\acute{a}n-(i)$, inst. pl. $\bar{a}s-\acute{a}-bhis$). In the nom.-acc. sg., however, $\bar{a}s-(n-)$ is suppleted by $\bar{a}s-\acute{i}yam$. But this does not prevent the stem $\bar{a}s-\acute{i}ya-$ from forming oblique case forms of its own: inst. $\bar{a}s-\acute{i}yena$, abl. $\bar{a}s-\acute{i}yāt$, loc. $\bar{a}s-\acute{i}ye$. It is therefore one thing to say that Gk. $\kappa\rho\acute{\alpha}\alpha\tau$ - lost its nom.-acc. and that this was supplied from a $\kappa\rho\acute{\alpha}\bar{\alpha}/*\kappa\rho\acute{\alpha}\bar{\alpha}\varsigma$ (however doubtful this may be in view of the gender situation). But it is quite another to explain the elimination of the oblique forms $*\kappa\rho\acute{\alpha}\bar{\alpha}\varsigma/*\kappa\rho\acute{\alpha}\bar{\alpha}$. It is all made even more difficult by the fact that in Vedic too there is no apparent explanation of the elimination of the oblique forms of the formation ($\acute{s}iras-$) that suppletes oblique $\acute{s}ir\bar{s}n-$. As will be suggested more fully below (III c), this all points to a comparison of Vedic $\acute{s}iras/\acute{s}ir\bar{s}n-$ not with suppletive $\bar{a}s-\acute{i}yam/\bar{a}s-(n-)$, but rather with the type $dóh/dos-n-$ ‘forearm’ or, more generally, with the type $\acute{a}sth(i)/asth-n-$ ‘bone’ (§ 54.2 ff.), where the original oblique stem has been expanded by *-n-*.

9.7.2.3 A further difficulty with an *r/n* stem that means both ‘horn’ and ‘head’ (§ 9.6) is that there is a certain amount of “overkill” inherent in this reconstruction. It will be suggested below (III b, IV) that there is no plausible evidence in any IE language for a $\hat{k}r_h s-(e)r$ - simply meaning ‘head’ nor for a $\hat{k}r_h s-(e)n-$ meaning ‘horn’ (cf. § 9.7.2.1).

9.7.3.1 The most fundamental drawback of an account like the one summarized above (§ 9.6), however, is in the semantic area. If we simply make it a premise that all the formations in the group $\hat{k}(e)r-(e)h_2(s)(r/n)$, unlike $\hat{k}or-u-$ and $\hat{k}(e)r-n(o)-$, could mean both ‘horn’ and ‘head’ at the same time, there are undesirable consequences.

1. An explanation for this situation is still entirely lacking. Our premise amounts to a description of the data.

2. We must resign ourselves to accepting semantic developments that are completely random even for a single formation within a single language, although another formation in the relevant group may behave with complete consistency.

As far as Greek is concerned, the kind of account under discussion (§ 9.5 ff.) would suggest, for example, that a neut. *n-a krāhṛ* ‘head; horn(s)’ was restricted to ‘horn(s)’ (§ 9.6 nos. 5, 6), while its endocentric derivative seen in (ναύ)- $\kappa\rho\acute{\alpha}\rho\omicron\varsigma$ ‘captain’ developed in the other direc-

tion to 'head' (§ 9.6 no.7), and in fem. compounds -κραῖρα was partly specialized in one meaning (e.g. ὀρθό-κραῖρα 'straight-horned') and partly in the other (ἡμί-κραῖρα 'half the head' § 9.6 no.7).

This already raises the question of what these compounds actually meant when they (or their models) were formed. Something like νάυ-κρατος surely presupposes 'head' for the second member. But if the (unattested) simplex κρατος did not necessarily imply this any more than it implied 'horn(s)' in the first instance, one might wonder how realistic the assumption of such a second member in such a compound is in the first place. As to the divergent specializations undergone by *krāh₂* and (the pre-form of) -κρατος, one might indeed argue that the two were no longer synchronically identifiable as the neuter and masc. versions of a word for 'head; horn(s)' when the semantic specializations occurred. But it is less clear how one compound in -κραῖρα that could mean both '-horn(ed)' and '-head(ed)' would fail to be synchronically identified with another -κραῖρα compound, so that each could go its own way.

No matter how one deals with such questions, the fact remains that this randomness is entirely restricted in Greek to the $\hat{k}r_h_2sr(o)$ -formations. The formation represented by $\acute{\kappa}\acute{\alpha}\rho\acute{\alpha}$ always means 'head', both as a simplex and in compounds (some of which are synchronically unanalyzable and have been for a long time). Likewise, $\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$ and its derivatives consistently mean 'horn', and the numerous reflexes and derivatives of $\hat{k}r_h_2sn$ - in Greek presuppose 'head' without exception. Consequently, attributing both the meaning 'head' and the meaning 'horn(s)' to all of the formations in $\hat{k}(e)r(e)h_2(s)$ (r/n), not only makes the $\hat{k}r_h_2sr(o)$ -forms semantically unpredictable, but makes the consistent behavior of all the others into a long series of coincidences.

9.7.3.2 There is evidence (cf. §§ 10–16 below) that the h_2 -stem $\hat{k}(e)r-(e)h_2$ -, when it does not mean 'head', does not mean 'horn' as an object either, but rather 'horn' as a material. If assigning the two meanings 'head (object)' and 'horn (object)' to a single lexical item is difficult, assigning 'head (object)' and 'horn (material)' is even more so.

There is also plausible evidence of a $\hat{k}\acute{\epsilon}r_h_2o$ - 'head' (§ 33), which shows the formal characteristics of an exocentric derivative. This would show at the very least that not all the words for 'head' in this group need be thought to have acquired this meaning by semantic specialization. Instead, it would seem to provide a case in which a word for 'head' has this meaning by virtue of being an exocentric derivative of some h_2 -

stem. It would seem advisable to take advantage of this in the interpretation of Gk. $\kappa\acute{\alpha}\rho\alpha$ and Hitt. $(kit)kar$.

9.8 The objections to which both the account in § 9.3 and the one in § 9.5 f. are open make it necessary to look for something more satisfactory. If these objections are to be met, our strategy should be

1) to operate with the smallest possible number of formations overall (§ 9.4 nos. 1, 2);

2) to avoid in particular the reconstruction of three or more independent paradigms that are virtually synonyms (§§ 9.4 no. 3, 9.7.1);

3) to dispense with the assumption (if at all possible) that the Greek and Vedic paradigms of their respective words for 'head' both actually result from the independent combination of two paradigms into one: $-h_2$ plus $-h_2-s-n-$ for Greek and $-h_2-s$ plus $-h_2-s-n-$ for Vedic (§§ 9.4 no. 5 b, 9.7.2). In both languages this raises very serious difficulties and has unattractive prerequisites (cf. no. 2 just above);

4) to attempt to explain the unique Greek paradigm ($\kappa\acute{\alpha}\rho\alpha/\kappa\rho\acute{\alpha}\alpha\tau-$) and the unique Vedic paradigm ($\acute{s}ir\acute{a}s/\acute{s}ir\acute{s}n-$) in such a way that their agreement on oblique $\hat{k}_i h_2 sn-$ is not entirely coincidental—even if the two languages formed their respective paradigms independently to some extent;

5) to give an account of why the $\hat{k}(e)r(e)h_2(s)(r/n)$ formations, descriptively speaking, mean both 'head' and 'horn', while $\acute{k}or-u-$ and $\hat{k}(e)r-n(o)-$ mean 'horn' only. This is perhaps the most essential requirement for an acceptable overall solution. It will not do simply to take this for granted (§ 9.7.3).

10.1 With these guidelines in mind, we may turn to the forms with apparent $\acute{k}erh_2-$, starting with Hittite $ka-ra-a-ua-ar$ ($/kar\acute{a}u\acute{a}r/$ or $/kr\acute{a}u\acute{a}r/$) 'horn(s), Gehörn'. That the root is the same $\acute{k}er-$ found elsewhere in words for 'horn' is practically unavoidable as a starting point for further analysis. It is the further analysis that is in question. A promising approach to this has been taken by H. Eichner¹³.

There are four known Hittite nouns in $-a\acute{u}ar$: $kar\acute{a}u\acute{a}r$, $part\acute{a}u\acute{a}r$ 'Flügel', $a\acute{s}\acute{a}u\acute{a}r$ 'Hürde', $har\acute{s}\acute{a}u\acute{a}r$ 'Feldbau'. They differ from the majority of Hittite nouns in $-uar$ in that the oblique cases of the small $-a\acute{u}ar$ group are in $-aun-$ (e.g. $har-\acute{s}\acute{a}-ua-ar/har-\acute{s}\acute{a}-\acute{u}-na-a\acute{s}$) as opposed to the

¹³ MSS 31, 92 n. 35.

- $\underline{u}ar$ /- $\underline{u}aš$ of the more frequent (and usually deverbative) type. The attested oblique forms of *karāu*ar itself include the loc. *ga-ra-ú-ni*[- (KBo. XVII 3 + III 26)]¹⁴, indicating that the word may safely be classified as a member of this small group (cf. *a-ša-u-ni* KUB XIII 5 II 22: *aša*u \underline{u} ar). In any case, the segmentation suggested by the situation within Hittite is $\hat{k}(a)r-\underline{a}u$ ar, i.e. the *aniš* $\hat{k}(e)r$ - of the other languages plus an - $\underline{a}u$ ar. The *aniš* root is suggested by *kar*- (rather than **karh*-) and the - $\underline{a}u$ ar is identifiable as a suffix elsewhere in Hittite.

10.2 The outlines of a probable further analysis of this - $\underline{a}u$ ar suffix have already been indicated by Eichner (n. 13). The segmentation that operates with the fewest hypothetical and unverifiable assumptions is - $\underline{a}-u$ ar¹⁵. It only remains to identify the - \underline{a} - to which the complex *r/n* suffix - $\underline{u}ar$ /-*un*- has been added. Eichner proposes - \underline{a} - < - eh_2 - (on the phonology see below), and this is the only real possibility¹⁶. The Hittite - $\underline{a}u$ ar formations may all be plausibly interpreted as remodellings of abstracts or collectives, and - eh_2 - is therefore not out of place in any of these cases. In particular, two are clearly deverbative (*aša*u \underline{u} ar ‘animal pen’: *ašzi* ‘remains’; *harša*u \underline{u} ar ‘agriculture’: *haršzi* ‘plow’), and the other two look (at least most immediately) denominative (*karā*u \underline{u} ar and *par-tā*u \underline{u} ar ‘wing’). To *aša*- and *harša*-, interpreted as verbal abstracts in - eh_2 -, one may compare either the *o*- grade type Gk. ἀγείρω ‘collect’: ἀγορά ‘(place of) assembly’, χέω ‘pour’: χοή ‘libation’ etc., L. *tego* ‘cover’: *toga* and so forth, or the zero-grade type Gk. φεύγω ‘flee’: φύγῃ

¹⁴ StBT 8, 34 (III.41). Cf. Neu *Lok*, 21. Also inst. pl. SI.ĪIA-*anda* (KUB XLIII 60 I 19), which presumably writes *karaunta*. Cf. Melchert *Abl and Inst*, 449.

¹⁵ The other main theoretical possibility is the assumption of a $\hat{k}r-o\underline{u}$ - γ or $\hat{k}r-o\underline{u}$ - $\bar{o}r$, with the $\hat{k}r-o\underline{u}$ - of Gk. δι-κροφ-*o*- plus -*r/n*-. But this is unattractive:

- a) simple -*r/n*- as a secondary denominative suffix has a doubtful status at best (cf. note 3 to this section), at least for PIE itself.
- b) in those rare cases in which a segmentable - $\underline{u}-(e)r/-\underline{u}-(e)n$ - in particular could be assumed (e.g. Av. *snāuuarə*/Ved. *snāvan*- ‘sinew’ vs. Av. *snāuu-ia*- ‘made of sinew’), the salient characteristic of the resulting formation is that the -*u*- has zero grade throughout the paradigm. We might thus expect $\hat{k}(e)r-\underline{u}$ - γ or $\hat{k}(e)r-\underline{u}$ - $\bar{o}r$, but not really $\hat{k}r-o\underline{u}$ - γ / $\hat{k}r-o\underline{u}$ - $\bar{o}r$.

Even if secondary denominative -*r/n*- is more plausible as an inner-Hittite formant than it is for PIE, the most straightforward analysis of *karā*u \underline{u} ar in Hittite terms is not $\hat{k}r-o\underline{u}$ - γ / $\hat{k}r-o\underline{u}$ - $\bar{o}r$ either (see the rest of § 10).

¹⁶ $\hat{k}r-o-\underline{u}$ is fairly well ruled out by the absence of any comparative evidence supporting a thematic formation made directly to this root. A $\hat{k}r-eh_2$ - on the other hand is well-parallelled.

'flight' (cf. L. *fugere* : *fuga*), Goth. *wilwan* 'steal' : *wulwa* 'theft' etc. Hittite *aša-(u)ar* and *ḫarša-(u)ar* might then formally represent either h_1os-eh_2 /*Hors-eh_2* or $h_1(a)s-eh_2$ /*Hrs-eh_2*. Functionally, the concretization in meaning of verbal abstracts—particularly apparent in *aša-(u)ar*—is an extremely common development, and not only for $-eh_2$ - abstracts (*toga* above is an especially clear example), but for other types of verbal abstracts as well. From the root of *aša-(u)ar* and *aš-zi* (h_1es-) Indo-Iranian has the neuter *as-ta*¹⁷ (RV *ásta-* 'home, homestead'; Av. *asta-* '(dog's) lair, kennel'). This is probably in the first instance simply an abstract of one of two types. It may either be compared to Gmc. *murþan* (< *mǫtom*: OIc., OE *morð* 'murder'—cf. Skt. *mṛtám* 'death') and Indo-Iranian *uktám* (< *uk^htóm*: G Av. *uxða-* = RV *ukthám* 'utterance'), or to the type with full grade root—e.g. Av. *sraotam* = OIc. *hljóð* '(act of) hearing, listening' < *kleptom*. In either case, the concretization of *ásta-* is exactly parallel to that of *aša-(u)ar*. The same interpretation may be applied to deverbative *ḫarša-(u)ar*, as from *H(o)rs-eh_2 + uor*. Here it may be of some interest to note in addition that a synonymous root in Indo-Iranian (*karš-* 'plow' < *k^hels-* cf. Greek τέλσον 'headland') makes both a deverbative $-eh_2$ - stem (Av. *karšā-* 'land bounded by furrows') and a $-uṛ/-un-$ stem (Av. *karšuuara/karšuuṇa* 'region, *Erdteil*'). To the latter of course, one may in turn compare the $-uṛ/-un-$ derivative of yet a third verbal root for 'plow': $h_2erh_3-uṛ/-un-$, directly continued by OIr. *arbor/arbae* 'corn' and indirectly by Gk. ἄρουρα and Arm. *harawowunk* ($h_2erh_3-uṛn-$). Given these parallels, one might even imagine that *ḫarš-a-(u)ar* ultimately represents a trivial kind of contamination of $-eh_2$ - and $-uṛ/-un-$ formations, and that the resulting $-a-(u)ar/-a-un-$ (with no great productivity in general in Hittite) was spread to one other agricultural term—thus the abstract-collective *aša + uar*, eventually with semantic concretization. But this can only be considered a possibility. The point to be retained is simply the plausibility of the interpretation $-ā + uar$ for these two forms.

10.3 The same interpretation, however, can easily be applied to *partāmar* 'wing'. The root is certainly that of *por-no-* 'wing, feather' (§ 7 above). From the same root we have Slavic *pero* 'feather' (OCS, ORuss. *pero* etc.). This *perom* (:**per-* 'cross, fly') seems to be a specialized ver-

¹⁷ This I-Ir *as-ta-* could also reflect *ps-to-*, with the root of Ved. *násate* 'betake oneself', Gk. νέομαι 'return' (so, e.g., Pokorny *IEW* 766, Mayrhofer *KEWAi* 1.66, 2.146–7). In either case, however, *asta-* is a concretized verbal abstract and the main point is unchanged.

bal noun of the type L. *serum* 'whey' : **ser-* 'flow' and OIc. *hvel* = OPr. *kelan* 'wheel' : $k^{\#}el-$ 'turn'.

Just as I-Ir. *ás-ta-* (original abstract > 'dwelling place') is matched by Hittite *aš-ā + ȳar* (abstract > 'cattle pen'), so Slavic *pero* (vbl. noun > 'wing') appears to have a correspondent in Hittite *par-tā + ȳar*. The underlying abstract in the Hittite form, deverbative in any event, may either have a zero grade (*partā-* < *pr-tā-*) and formally correspond to, e.g., Gk. *σπάρα* 'rope' (*spṛ-tā-*; cf. *σπεῖρα* 'coil' < *sper-ih₂*), or else an *o*-grade (*por-tā-*). Comparable in the latter case would be Gk. *κοῖτη* 'bed' (: *κεῖται* 'lies') etc.¹⁸

10.4 To sum up, we can say at the very least that if the members of the small and unproductive Hittite *-āȳar/-aun-* group are to have a starting point in common at all, it is most likely to have been that they are *-eh₂-* stems which have been extended by *-ȳar* and concretized in meaning. As to the special circumstances that led to the addition of *-ȳar* to these few *-eh₂-* stems, but not to others (e.g. *ḫašša-* 'hearth' : L. *ara*, Osc. *aasai*?), we may only speculate (cf. in any case the remarks above concerning *ḫaršaȳar*).

11.1 If $k(a)rāȳar$ is to be interpreted in the same way as the other members of the *-āȳar/-aun-* class, then it reflects a $k(a)r-ā + ȳar$, an *-ā-* (*-eh₂-*) stem $\hat{k}r-eh_2$ or $\hat{k}ṛr-eh_2$ ¹⁹ (alternants by Lindeman's Law²⁰) which has been further suffixed within Hittite by *-ȳar* only after the loss of final *h₂* had yielded $k(a)rā$ ²¹. Thus $\hat{k}(r)-r-eh_2 > k(a)rā$; $k(a)rā + ȳar \rightarrow k(a)rāȳar$.

¹⁸ Abstracts of *per-* 'traverse, fly' are found concretized with notable regularity. In addition to OCS *pero* 'feather' (< abstract *perom*), already mentioned, there are Latin *porta* 'passage, gate' (*prtā* or *portā*) and *portus* 'door' (XII Tab), 'harbor' (*prtū*—cf. e.g. OHG *furt*, OE *ford* 'ford'), OE *fōr* in the meaning 'cart, wagon' (*pōrā*), and reduplicated Balto-Slavic *pāparti-/papartja-* 'fern' (cf. Trautmann *BS/W*, 206).

¹⁹ Naturally, a $\hat{k}oreh_2$ could also be considered a possibility—at least in that it would pose no phonological problem. But this would imply fairly strongly, given our hypothesis that the Hittite *-āȳar* type represents extended *h₂*-stems, that this $\hat{k}oreh_2$ should be of the $\chi o\eta$, *toga* type (§ 10.2). And although it is perfectly possible that *ašāȳar* and *ḫaršaȳar* (made from roots that also supply primary-looking verbs) do in fact represent *-ȳar* extensions of abstracts of precisely that kind, an identical analysis could be applied to *karāȳar* only with difficulty, since nowhere is there any real trace of verbal formations made to this root.

In contrast, a $\hat{k}r-eh_2$ / $\hat{k}ṛr-eh_2$ for Hittite can be straightforwardly aligned with what comparative evidence is to be found elsewhere (§ 12).

²⁰ NTS 20, 38 ff.

This Hittite form indicates not that there was a *set* $\hat{k}erh_2$ - beside the *aniṭ* $\hat{k}er(-n(o)-$ and $-u-)$ in the semantic area 'horn', but rather that the 'horn' group included three stems: $\hat{k}or-u-$, $\hat{k}(e)r-n(o)-$ and $\hat{k}(e)r-(e)h_2$ -. The analysis of Hittite $\bar{a}yar$ into $\bar{a}-$ ($< -eh_2-$) plus $-yar$ points clearly in that direction. At first glance, one could still consider the possibility that although the Hittite suffix $\bar{a}yar$ is to be analyzed this way, it was only secondarily extended to $kar\bar{a}yar$ 'horn(s)' (presumably from *partāyar* 'wing'). But to single out one member of a small and unproductive class in this way without any positive reason for doing so is a completely arbitrary procedure. Furthermore, the *kar*- (root noun $\hat{k}(e)r-$?) thus implied is completely without comparative support, while an $\bar{a}-$ stem $\hat{k}(e)r-(e)h_2$ - is directly or indirectly attested in Greek, Indo-Iranian and probably Latin (details below).

11.2 As valuable as Hittite $kar\bar{a}(yar)$ 'horn(s)' may be in pointing to a $\hat{k}r-eh_2-/ \hat{k}r-eh_2$ -, it provides no direct information on a number of further points. Since the form is only the derivative of an $-eh_2$ - stem, little can be concluded, strictly speaking, concerning the gender, the inflection, and the precise semantics of the $-eh_2$ - stem itself. But although firm conclusions are beyond our reach, some hypotheses regarding these questions may at least be considered safer than others if they are framed on the basis of the indications offered by the $\bar{a}yar/$ $-aun-$ class as a whole.

If, in other words, it is unattractive to give $kar\bar{a}yar$ a derivational history that is utterly distinct from that of its only parallels, we would say that the best guess, with respect to stem formation, inflection and gender, is that the $kar\bar{a}$ - in which we are interested was (or became) an $\bar{a}-$ stem in Hittite. Furthermore, we would suppose that this $\bar{a}-$ stem $kar\bar{a}$ -, before the addition of $-yar/-un-$, probably belonged to the same morphological category as did *partā*-(*yar*) 'wing' in particular. More specifically, this would mean that $kar\bar{a}$ - came to be a member of the group of Hittite formations that otherwise (*partā*-, *ašā*-, *haršā*-) seem to go back to the kind of PIE $-eh_2$ - stem that lies behind feminine \bar{a} -stems in other IE languages. This, in turn, implies a nom. sg. $k(a)rah_2$ or $k(a)rā$ at a relatively early date, but not necessarily, of course, the analysis $-a-h_2$ ($< -e-h_2$) that one would be inclined to give to $p(o)r-te-h_2$ (*partā-yar*) in particular. There is no reason to take $k(a)rah_2/k(a)rā$ as a verbal abstract in origin.

²¹ This seems to have happened only within the history of Hittite itself, since Palaic may still preserve final laryngeals (Watkins, *Flex. und Wortbildung*, 358 ff.).

Finally, it would seem that not much semantic content need be attributed to the $-uar/-un-$ by which these \bar{a} -stems have been expanded. The abstracts $part\bar{a}$ -, $a\bar{s}\bar{a}$ - and $har\bar{s}a$ - could, in theory (§ 10.2), have the meanings ‘wing’, ‘pen’ and ‘agriculture’ all by themselves. Furthermore, as already noted, $har\bar{s}a-uar$ is vaguely reminiscent of Av. $kar\bar{s}uuar\bar{a}$ ‘region’ and of PIE h_2erh_3-ur (§ 10.2). And more to the point, it is conceivable that $kar\bar{a}-uar$ owes its $-uar$ to $part\bar{a}uar$ (cf. § 7.3). If, in any case, it seems reasonable to see the $-uar$ formations as expansions of this sort, we would be led to think that $kar\bar{a}$ - itself had a meaning in the general area of ‘horn’.

To summarize, it would appear that the path of least resistance in the analysis of $kar\bar{a}uar$ lies in taking it to be an inner-Hittite expansion of a (feminine?) formation in $-eh_2-$ ($\hat{k}r-eh_2$) that meant ‘horn’ in one way or another.

12.1 For anything further, additional evidence is needed. This is available in Indo-Iranian, Latin, and especially Greek. There is also more Hittite evidence to consider.

An exact morphological and semantic match for Hittite $kar\bar{a}(uar)$ – a noun in $\hat{k}(e)r-(e)h_2-$ with a meaning more like ‘horn’ than ‘head’ – is found in Greek. It appears in Mycenaean only (and just possibly as a Homeric archaism). Since the relevant forms have not been utilized as evidence bearing on this problem, the details of their attestation may be given here.

12.2 The text of KN Ra 984 + fr., one of the Knossos sword-tablets, is given as follows²²:

.1]pa-te, dede-me-na, [

.2]zo-wa, e-pi-zo-ta, ke-ra, de-de-‘me-na’ PUG [

The perf. participle *dedemenō*- ‘bound’ (: pf. δέδεμαι, pres. δέω/δίδημι), which occurs here twice, is otherwise found securely attested in Mycenaean in two chariot-wheel tablets from Pylos²³:

Sa 287 a-ku-ro, de-de-me-no, ROTA ZE 1 [

‘a pair (of) wheels bound with silver’

Sa 794 ka-ko, de-de-me-no, no-pe-re-e, ROTA ZE 1 [

‘a useless pair (of) wheels bound with bronze’

These are writings of *argurōi dedemenō* and *khalkōi dedemenō* respectively (‘bound with silver/bronze’), with the dual of the participle for

²² *Kn Tablets*, 267.

²³ Also *Ra* 7498?

the single pair of wheels in each case. The meaning is sure, and for wheels 'bound' with metal one may compare KN So 894 (Knossos chariot wheels), which contains the phrase ... ka-ko-de-ta ROTA ZE [... 'x pairs (of) bronze-bound (*khalko-deta*) wheels'.

In any case, the two Pylos tablets above show that the syntax to be expected in Ra 984 is the dat.-inst. of the material with which the swords (or the hilts) are bound plus the participle *dedemeno-*. For the 'binding' of swords cf. O 713 ... φάσγανα (καλὰ) μελάνδετα || ... [*] This makes it likely, as has been suggested before²⁴, that Ra 984.2 is to be restored as *e-re-pa-te de-de-me-na* = *elephantei dedemena* 'bound with ivory', and it may be noted that Ra 1028, a fragmentary Knossos sword tablet²⁵, does at least have a full *e-re-pa-te* in its first line²⁶. But this further implies²⁷ that the phrase *ke-ra de-de-me-na* in line 2 of Ra 984 is also the dat.-inst. of some material plus the participle, and the obvious choice for an identification of that material is 'horn'. Ra 984 would then seem to inventory a certain number of swords 'bound with ivory' in line 1 and some others²⁸ in line 2 'bound with horn'.

12.3 The most interesting thing from our present point of view, however, is that the apparent dat.-inst. *ke-ra* cannot be a writing of the dat.-inst. of the neuter *s-* stem *keras*, which would appear as **ke-ra-e* = *kerah(ei)-ei/-ē* or **ke-ra-i* = *kerah(i)*²⁹. In fact, an instrumental singular

²⁴ *Documents*², 456.

²⁵ Probably to be joined with Ra 7498: *Documents*², 517.

²⁶ Cf. *ajamena*, -no erepate in the *Sd* tablets (Knossos chariots).

²⁷ *Documents*², 456; Chadwick-Baumbach, *Glotta* 41, 209; Baumbach, *Glotta* 49, 170.

²⁸ *zo-wa e-pi-zo-ta* in line 2 remains obscure. Cf. *Documents*², 456 with the reference to Petruševski, *Živa Antika* 18, 128.

²⁹ At both Knossos and Pylos, consonant-stems other than *s*-stems have datives in -*Ce* in the great majority of the examples, and this no doubt spells the ending -*ei*. Non-*s*-stem datives in -*Ci* do occur, but very rarely (e.g. ? *ko-re-te-ri* 2x Py On 300). Such consonant stems also have -*Ce* in locative function, however, (e.g. the place names *a-pu₂-we* Py An 427 etc., *a₂-ru-wo-te* Py An 657) at least at Pylos; cf. in particular *o-pi-me-ne* (Py An 7) if this really means 'per month' and is to be divided *opi mene* (*Documents*², 565 *sv*).

Instrumentals of consonant stems other than *s*-stems also have -*Ce*, and this is possibly an ending -*ē* (< -*eh₁* / -*h₁*): *a-di-ri-ja-te* (Py Ta 707), *e-ka-ma-te* (Py Ta 642), *e-me po-de* (Py Ta 641), *po-ru-po-de-* (Py Ta 722) etc.

For the *s*-stems, however, the situation is somewhat different. Place names that are *s*-stems usually have -*e* in locative function (like other *C*-stems): *a-pe-ke-e* Py Jn 431, *te-se-e* Py Na 531 etc. But -*i* is relatively frequent too: *e-ra-te-i* Py Cn 608, *e-re-i* Py Jn 829, *ti-mi-to-a-ke-i* Py An 661 (beside *ti-mi-to(-)a-ke-e* Cn 600 etc.). But *s*-stems that are not place names have -*i* when functioning as locatives, although the

of *keras* here would be, if not exactly unexpected, at least noteworthy. Neither in Homer³⁰ and Hesiod, nor in lyric poetry, nor in Herodotus is there a clear example of a singular form of κέρας that means 'horn' as a material rather than an object. Of these sources, only Homer refers to the material at all. But only the plural forms of are used in this meaning; e.g. τ 563:

αἱ μὲν γὰρ κεράεσσι τετεύχεται, αἱ δ' ἐλέφαντι

This makes it somewhat doubtful whether singular forms of *keras* were ever used in early Greek to refer to the material 'horn'.

If Mycenaean *ke-ra* (*dedemena*) is a dative-instrumental, as is suggested by the parallel *e-re-ja-te* (*dedemena*) in the same tablet and by *a-ku-ro/ka-ko* (*dedemenō*) in a comparable usage, it must be the dat.-inst. of an \bar{a} -stem *kerā* meaning 'horn' (the material as opposed to *keras* 'horn (the object)'³¹). The dat.-inst. of an \bar{a} -stem *kerā* would be

evidence is not extensive: cf. *o-pi-e-de-i* Py An 1281 (if this is *opi hedehi* with *Documents*² 565), perhaps *o-ṛe-i* Kn B 7034 + 7705 (cf. *Documents*² 566), and the iterated locative *we-te-i-we-te-i* Py Es 644 (*Documents*² 591).

Unlike other consonant-stems, *s*-stems in the dative regularly show *-i* and not *-e*. The evidence basically consists of *s*-stem personal names: e.g. *e-u-me-de-i* (Py Fr 1184), *ko-o-ke-ne-i* My Oi 703, 704), *ti-ri-se-ro-e* (Py Fr 1204, Tn 316), however, is an example of a probable *s*-stem (of a different type to be sure) that has the *-ei* dative ending of the other C-stems.

When, therefore, it comes to the question of what ending to expect *a priori* for *s*-stem instrumentals, there is room for a certain amount of doubt. But the best guess is probably *-e* in spite of the apparent partial lack of parallelism between *s*-stems and other consonant stems.

³⁰ Most Homeric instances are unambiguously interpretable as to whether they mean 'horn' as an object or the substance. At Λ 385, in Diomedes' remarks to Paris, κέρρα ἄγλαέ (or perhaps better κέρα(ι) ἄγλαέ) is a little more obscure, but certainly does not name the material. In all probability we have here simply the earliest example of a marginal tendency in Gk. to use 'horn' words to mean 'hair'. One may compare the use of ὀρθό-κερως ('straight-horned' in Aeschylus Fr. 74.2 with βοῦς) to mean 'making the hair stand on end' in ὀρθόκερως φρίκη (Sophocles Fr. 875 Pearson), an expression that is paraphrased by Pollux (2.31), Phot. *Lex.*, and Hsch. with ὀρθόθριξ. Similarly, beside the Homeric -κραιρα compounds, which mean '-horned' (§ 65), there is the epithet μελάγ-κραιρα 'black-haired' (Lyc. *Alex* 1464, ps-Arist. *Mir.* 838²⁹).

It would seem, therefore that κέρα ἄγλαέ means 'sleek-haired', and it is presumably a slight re-interpretation of this very expression as 'sleek-headed' that accounts for the curious gloss κέρας: κεφαλή in Hsch. and the similar statement (EM 504.50) κέρας λέγεται καὶ ἡ κεφαλή.

³¹ The *s*-stem *keras* is not attested with absolute certainty in Mycenaean. In Kn K 872, the reading may be]*ke-re-a* and not]*ke-ra-a* (*Documents*² 330, 495). In Py Sa 840, it is

kerāi, written *ke-ra*. An \bar{a} -stem *kerā* might not be established beyond doubt by this single form. But its existence can be confirmed from other Mycenaean evidence.

13.1 Eleven times³² (all of them at Knossos)—ten times on tablets of the Sd series and once on an Sf tablet—a chariot assembly is said to include 'harness-attachments' or 'bits' (Mycenaean term *opi(h)ijā*-³³) 'made of horn'. Typical in this respect is the first tablet of the Sd series (4401.a): ... *ke-ra-ja-pi, o-pi-i-ja-pi* ... 'with horn bits'. That *kerajapi* is a feminine inst. pl. material adjective is made evident by the less fre-

not really certain (despite Lejeune *RPh* 42, 232) that *ke-ra-e* is the inst. sg. of *keras* 'horn'. The tablet reads:

ke-ra-e te[] ROTA + TE ZE 1

If, as seems likely, this is to be restored *ke-ra-e te-mi-dwe-te*, the text is best interpreted in the light of the numerous other wheel tablets that contain the descriptive adjectival *termidwent-* (and *odatwent-/odakwent-*). In these others, it is typically a genitive of material that accompanies the possessive adjective in *-went-*, and not an instrumental. This is quite clear from *Sa* 793:

e-re-pa-to te-mi-dwe-ta pa-ra-ja ta-na-wa ROTA + TE ZE ... 11

Here the wheels called *termidwenta* are also *elephantos* 'of ivory'. At first sight, there might seem to be some ambiguity (gen. vs. dat.-inst.) in the extremely common phraseology displayed by:

Kn So 894.1 ... pe-te-re-wa 'te-mi-dwe' ...

.3 ki-da-pa te-mi-dwe-ta ...

So 4429 + 5790 + 6019 + *fr.* b a-mo-ta pte-re-wa te-mi-dwe-ta ...

So 4431 + 8378 + 8569 a-mo-ta te-mi-dwe-ta pte-re-wa ...

So 4434 + *fr* e-ri-ka te-mi-dwe-ta ...

So 4439 + 5415 a-mo-ta e-ri-ka te-mi-dwe-ta ... etc.

cf. Kn So 4432 + 5804 + *fr* e-ri-ka o-da-twe-ta ...

So 4446 + 5977 a-mo-ta e-ri-ka o-da-ke-we-ta ... etc.

But it is demonstrable from Kn So 4437 + 4127 that *pterewa* and *erika* in these frequently recurring phrases are genitives (*-ās*) and not dat.-inst. The tablet in question runs:

a-mo-ta pte-re-wa a-ro₂-jo te-mi-dwe-te

And it is clear that the genitive *aro₂jo* (= *aryohos* 'better'—cf. Szemerényi *Stud Myc* 26–7) must modify *ptelewās* 'of elm', which is consequently also genitive. It may be concluded from this, in turn, that *pterewa* and *erika* (*helikās* 'of willow') in the tablets quoted above (and the numerous others like them) are always genitive. This is probably the case with *kidapa* in *So* 894 as well, although the precise meaning of the word escapes us. If so, however, there is little chance that *keras* (before *te[midwete]*) in *Sa* 840 is an instrumental of material in place of an otherwise standard genitive.

³² *Sd* 4401, 4403 + 5114, 4404 + *fr.*, 4405 + 4410 + *fr.*, 4406, 4407 + 4414, 4408 + 4411 + 6055 + *fr.*, 4413, 4415 + 4417 + 4469 + *fr.*, (4450) + 4483; *Sf*. 4428.

³³ *Documents*² 365, 565 with reference to Ruijgh *Études*, 204 f.

quent but obviously parallel *ka-ke-ja-pi o-pi-i-ja-pi* (*khalkeiāphi opi-*) 'with bronze bits', occurring three times on Sd tablets³⁴. The material adjective *kerajo-* 'of horn' is only found modifying *opi(h)ijapi*³⁵, and the whole phrase *kerajapi opi(h)ijapi*, as we have noted, occurs eleven times. Of these eleven instances, ten have the material adjective written *ke-ra-ja-*. Only once do we find *ke-ra-i-ja-*. This is in Sd 4450 + 4483.a³⁶: *ke-ra-i-ja-pi, o-pi[-i-]ja-pi*. If *ke-ra-ja-* is the spelling ten of eleven times, it may surely be taken as evidence that *kerajapi* normally had only four syllables. The sequence (*ke-ra*)-*i-ja-pi*, with its extra *-i-* sign, may well have been written inadvertently by a scribe who was already thinking ahead to the (*o-pi*)-*i-ja-pi* which was to follow – and which always follows *ke-ra-ja-pi* in the tablets we have. The *-i-(ja-pi)* that is unique and deviant in *ke-ra-i-ja-pi* is precisely what is normal and exceptionless for the word that always comes next, and any other explanation of the spelling would have this as a suspicious coincidence.

13.2 Just as the apparent dat.-inst. *ke-ra* in Ra 984 cannot be the dat.-inst. of *keras*, the material adjective *ke-ra-ja-(pi)* cannot be an adjectival derivative of *keras*³⁷. The suffix in question is the wide-

³⁴ Sd 4409 + 4481 + fr., 4412 + fr., 5091 + 6066 + fr.

³⁵ *ke-ra-ja* in Kn V 831 seems to be a personal name.

³⁶ Cf. Bennett, *Minos* 5, 207. The two spellings are not likely to reflect the differing practices of two different scribes. The ten *keraja*-forms and the unique *keraija-* were all written by the same hand (no. 128 of *Kn Tablets*).

³⁷ Peters *Untersuchungen*, 88 note 40 mentions the possibility of seeing *keraja-* as simply syncopated from *kerah(i)jā-*. But in view of the dozens of Mycenaean forms in *-e-i-jo* / *-e-i-ja*, *-a-i-jo* / *-a-i-ja*, *-o-i-jo* with unsyncopated *-hijo-* / *-hijā-* (cf. Doria, *Athenaeum* N.S. 36, 389–94; Heubeck, *IF* 64, 229–33, Ruijgh *Études*, 198 ff.), and the apparently complete lack of a sure parallel for the syncope in question (Peters, *loc cit.* on *te-re-ja* / *te-re-ja-en*), this does not seem probable.

A somewhat different way of obtaining *keraja*-form an earlier *kerahijā-* is offered by Peters as well (*Untersuchungen*, 323 f. – Addenda). Here it is speculated that intervocalic *h* in the sequences *āhi*, *ēhi*, and *ōhi* disappeared abnormally early (earlier, at any rate, than in *eha* etc.), and that among the outcomes of this precocious *h*-loss, *-āhjo-* (< *-āhijō-*) was contracted (phonologically regularly) to *-ajjo-* because there already existed a category of *-ajjo-* derivatives which it could join (the *-ajjo-*-type from *-eh₂jō-*, e.g. Py *ku-na-ja*). Thus *kerah(h)jō-* > *kerajjo-*. But *-ā(h)jō-*, *-ē(h)jō-* etc., according to this hypothesis, kept disyllabic *-ijō-* analogically (on the model of *-Cijō-*) because there were no *-āijō-*, *-ēijō-* classes that could absorb them. Thus *po-si-da-i-jo* (< *-dāh-ijō-*), *e-ke-i-ja* (< *-eh-ijā*), *wi-do-wo-i-jo* (< *-yoh-ijō-*) etc. remained without diphthongization.

This view is unattractive for at least four reasons:

a) There is some reason to suppose that Mycenaean did in fact have a derivative type in *-ejjō-* (especially common in fem. *-ejjā*), although its source is admittedly unclear.

spread $-i\dot{\jmath}o$ -³⁸ that forms denominative derivatives which are functionally equivalent to a genitive of the substantive from which they are

In contrast to the derivatives made with the inherited material adjective suffix $-e\dot{\jmath}o$ - (which appears, at least at Knossos, both as $-e\dot{\jmath}o$ and as $-eo$, and which furthermore alternates with $-i\dot{\jmath}o$: *wirinejo/wirineo/wirinijo* 'made of hide'), there is a class of derivatives in $-e\dot{\jmath}o/-eja$ which do not denote material, never alternate with $-i\dot{\jmath}o/a$, and have no $-eo/a$ by-form. Some of these are women's names or designations of (groups of) women in $-eja$ that are derived from masc. names of all stem types (*wo-di-je-ja* Py Kn My : *wo-di-jo* Py Kn, *ko-ma-we-te-ja* Py Th : *ko-ma-we* Py Kn; *ma-ri-ne-we-ja-i* (dat. pl.) Th : *ma-ri-ne-u* Kn). In other cases, the $-eja$ formation designating women is derived from an object with which the women are perhaps professionally concerned (*pa-ke-te-ja* Py : *pa-ko-to* 'vessel' Py, *o-nu-ke-ja* Kn : *o-nu-ka* 'fringe' Kn, *ri-ne-ja* Py : *ri-no* Kn Py 'flax'). Beside these, there is to be recognized a type of derivative in $-e\dot{\jmath}o$ that simply has the function of a genitival adjective (Ruijgh *Études*, 258 ff. – *pe-ri-qo-te-jo* 'belonging to P' Kn, said of sheep : *pe-ri-qo-ta* Kn Py). Somewhere in this non-material $-e\dot{\jmath}o/a$ category also belong *da-da-re-jo-(de)* Kn and *re-wo-te-re-jo* Py. In any case, the lack of $-eo/-ea$ forms in these non-material derivatives at least raises the possibility of a category of $-e\dot{\jmath}ios/-e\dot{\jmath}i\bar{a}$ formations which putative $-e(h)i\dot{\jmath}o/\bar{a}$ derivatives (with premature h -loss) might well have joined by diphthongization once the h was gone, just as *ker(a)h\dot{\jmath}o*- in Peters' hypothesis joined the $-a\dot{\jmath}io$ -class. But $-e(h)i\dot{\jmath}o/\bar{a}$ formations never appear as disyllabic $-e\dot{\jmath}o/a$.

b) If $\acute{d}hi$, $\acute{e}hi$, and $\acute{o}hi$ lost h early and then became monosyllabic diphthongs unless there was morphological interference (morpheme boundary), one would have to assume that the sequences $-(C)a-i-$, $-(C)e-i-$, and $-(C)o-i-$ at Pylos (where second members of i -diphthongs are not written) always represent disyllables whose diphthongization was delayed by morphological factors. This is highly unlikely in a number of cases. It is hard to see, for example, what held up the diphthongization in *ko-i-ro* (MN Py Eb 862, Ep 613) or in *na-i-se-wi-jo* (PN? Ethnic? Py Jn 692, Mn 1408) or in *ra-i-pi* (PN Py Na 530). At least at Pylos, the assumption of early h -loss in $\acute{d}hi$ $\acute{e}hi$ and $\acute{o}hi$ followed by diphthongization is not workable.

c) If $-a(h)i\dot{\jmath}o$ - was diphthongized to $-a\dot{\jmath}io$ - because this outcome was supported by a pre-existing isofunctional $-a\dot{\jmath}io$ - (< $-eh_2i\dot{\jmath}o$ -), while $-e(h)i\dot{\jmath}o$ - etc., lacking such support (cf. a above however), retained a disyllabic $-i\dot{\jmath}o$ - on the model of $-C\dot{\jmath}io$ -, the implicit further assumption is that the availability of an $-a\dot{\jmath}io$ -category for $-a(h)i\dot{\jmath}o$ - to join somehow played a more important role in those developments than did any morphological parallelism of the type:

$-os$	$-as$
$-eh-os$: $e(h)-i\dot{\jmath}o-$	$= -ah-os$: $-a(h)-i\dot{\jmath}o-$

This is a little surprising, and it is not clear that it should have been so.

d) The extremely frequent traces of disyllabic $\acute{e}u$ - (< $\acute{e}hu$ -) in Homer ($\acute{e}u\delta\mu\acute{\eta}tov$, $\acute{e}u\zeta\acute{\omega}vov$, $\acute{e}u\theta\rho\acute{o}vov$, $\acute{e}u\kappa\lambda\acute{\epsilon}\varsigma$ etc., $\acute{e}u\kappa\nu\acute{\eta}\mu\acute{\iota}de\varsigma$, $\acute{e}u\kappa\tau\acute{\iota}\mu\acute{\epsilon}vov$, $\acute{e}u\kappa\tau\acute{\iota}vov$, $\acute{e}u\zeta\acute{o}ov$ etc.) do not favor an especially early loss of h in the sequence ehu . And one would then wonder why ehi (and ahi , ohi) should behave so differently. To this it might be replied that disyllabic $\acute{e}u$ - in compounds takes its cue from the simplex adjective(s) $\acute{e}u\varsigma$ / $\acute{\eta}\acute{\upsilon}\varsigma$, where diphthongization would have led to monosyllabic forms. But overall it is difficult to think of any concrete justification for the assumption that i would affect a preceding h more detrimentally than other vowels in general and u in particular.

made. To give only a very few examples, the group includes simple adjectives with the meaning 'of, belonging to':

Hom.: τένοντας αὐχενίους (γ 449–50) 'sinews of the neck'

Νεστορέη³⁹ παρὰ νηΐ (B 54) 'beside Nestor's ship'

δήμιος ... οἶκος (υ 264–5) 'house belonging to the δῆμος'

Myc.: *da-mi-jo* (PY Ea 803) = *dāmion* '(land) belonging to the *dāmos*'; cf. Hom. δῆμιος

also ethnic adjectives (often substantivized into ethnic names):

Hom.: Ἑλικώνιον ... ἄνακτα (Y 404) 'lord of Helicon' (: Ἑλικών)

Ἀγκαῖον ... Πλευρώνιον (Ψ 635) 'A. of Pleuron, A. the Pleuronian' (: Πλευρών)

Πύλιοι (H 134) 'the Pylians' (: Πύλος)

Myc.: *pe-re-u-ro-ni-jo* (PY An 656) = Πλευρώνιος

ko-no-si-jo (KN Am 600 +) = Κνωσίος 'Knossan' (: *ko-no-so* KN Ak 626 + = Κνωσός)

and patronymics:

Hom.: Τελαμώνιος Αἴας (B 528 +)

Myc.: *a-ko-mo-ni-jo* (KN De 1112 +) = *Akmonios* (: Ἀκμων)
e-ko-to-ri-jo (PY Cn 45) = *Hektorios* (: *e-ko-to* = *Hektōr*)

wa-du-ri-jo (PY Jn 725) = *Wādulios* (: Ἠδύλος)

Patronymics in -ιο- later on in Greek are basically an Aeolic characteristic⁴⁰. In addition, however, -ijo- is found forming material adjectives in Mycenaean⁴¹ and in Aeolic⁴²:

³⁸ e.g. Chantraine *Formation*, 35 ff., Risch *Wortbildung*², 112 ff., Riuggh *Études*, 99 ff.

³⁹ Νεστορέη < Νεστορή, Wackernagel *SpU*, 68 f.

⁴⁰ e.g. Thumb-Scherer *GD*, §§ 226 a) 4., 238.3, 247.3, 257.2; Buck *GD*, § 168. Cf. further A. Morpurgo Davies, *Glotta* 46 (1968), 85 ff.

⁴¹ In Mycenaean, -i-jo competes with -e-jo and -e-o in this function. Cf. paragraph a) in note 37 just above.

⁴² For Lesb., Thess., Boe. cf. the notes just below. The virtual absence from Homer of real material adjectives in -ιος is not surprising, since any metrically usable -ιος could always be replaced by -εος. The theoretical possibility that -ιος material adjectives were Ionicized to -εος in the Homeric tradition gains plausibility from the occasional appearance of -εος in place of -ιος in some non-material adjectives. The derivative κύνεος (I 373) 'impudent, indecent' (< 'dog-like') has -εος in the same function that -ιος shows in cases like πελώριος 'monstrous'. A more narrowly localized analogy accounts for Ἀγαμεμνόνεος 'of A.', directly modelled on Ἐκτόρεος, Νεστόρεος (Risch, *Wortbildung*², 133; cf. note 39).

Myc.: *wi-ri-ni-jo* (KN *Sd* 4401 +) = *wri̯nio*- 'made of hide'
 (: *wi-ri-no* = *wri̯no*-/ῥινός 'hide')

ka-ki-jo (KN *So* 894) = *khalkio*- 'made of bronze' (: *ka-ko* = *khalko*-/χαλκός 'bronze')

Lesb.⁴³: *χάλκιος* 'of bronze', *χρύσιος* 'of gold'

Thess.⁴⁴: *λίθιος* 'of stone'

Boe.⁴⁵: *χρύσιος* 'of gold', *ἀργούριος* 'of silver'

This use of a "genitival" adjective formation as a material adjective is something to which we shall return later on.

13.3 At any rate, this *-i̯jo-* suffix is certainly the one involved in the material adjective *kerajo-* 'of horn'. But since word-internal intervocalic *-h-* (< *-s-*) has not yet been lost in Mycenaean⁴⁶ (or at least has been lost so recently that there is still a hiatus in practically all forms that have lost such an *-h-*), *-i̯jo-* derivatives of *s-* stems are regularly written with a disyllabic *-i-jo-* or *-i-ja-* in hiatus⁴⁷. E.g.:

po-si-da-i-jo (PY *Tn* 316) = *posidā(h)i(i)on* '(shrine?) of Poseidon' cf. *po-se-da-o* = *Poseidā(h)ōn*

e-te-wo-ke-re-we-i-jo (PY *An* 654 +) = *Etewoklewe(h)i(i)os* 'son of *Etewoklewēs*' (= 'Ετεοκλήης) cf. ... (βίης) 'Ετεοκληείης (Δ 386) = 'Ετε(Ϝ)οκλε(Ϝ)εῖης with metrical lengthening (*-ῆης* replaces *-ίης* on the model of *Νεστορέη*, 'Αγαμεμνονέης etc.)

wi-dwo-i-jo (PY *Ep* 539) = *Widwo(h)i(i)os*, personal name derived from *widwōs* (cf. εἰδώς)

This makes it quite clear that a material adjective in *-i̯jo-*, if derived from the *s-* stem *keras*, would regularly have a fem. inst. pl. of the form *ke-ra-i-ja-pi* (= *kerā(h)i(i)ā-phi*). As we have seen, however, this expected writing is found only once in eleven instances of the adjective, and even that lone occurrence need not be taken entirely seriously, as pointed out above. The regular form is *ke-ra-ja-pi*.⁴⁸

13.4 Although this adjective cannot be morphologically reconciled with the view that it is derived from *keras*, it is exactly what would be

⁴³ e.g. Thumb-Scherer *GD*, § 257.3.

⁴⁴ e.g. Thumb-Scherer *GD*, § 247.4.

⁴⁵ e.g. Thumb-Scherer *GD*, § 238.4.

⁴⁶ e.g. Lejeune *Phonétique*, 89 ff.

⁴⁷ Cf. Doria, *Athenaeum* N. 5.36 (1958), 389 ff. (= Fasc. IV, 96 ff.); Heubeck, *IF* 64 (1959), 229 ff.

⁴⁸ Cf. note 37 as well.

expected for a derivative of the \bar{a} - stem $ker\bar{a}$ that seems to be attested in the dat.-inst. in *Ra* 984. For $-i\bar{j}o-$ derivatives of \bar{a} - stems, inherited into Greek in the form $-eh_2-i\bar{j}o-$, would have developed to $-āi\bar{j}o-$ as soon as intervocalic laryngeals were lost in Proto-Greek, and would have become $-ai\bar{j}o-$ soon thereafter. This stage, as one might expect, has already been reached in Mycenaean, where the normal pattern is noun in $-\bar{a}$: derivative in $-ajo-$ (e.g. *ku-na-ja* PY Ta 711.3 = *gunaiā*, derived from *gunā* = γυνή). Mycenaean thus presents evidence for a \bar{a} - stem substantive $ker\bar{a}$ ‘horn (material)’ and a normal derivative $kerai\bar{j}o-$ ‘of horn’.

14.1 Once again, as was the case with Hittite *karā-uar* (§ 11.2), we lack the information necessary for a decisive and detailed analysis. Mycenaean $ker\bar{a}$ is only found in the dat.-inst. singular, and never with an adjective. This makes its inflection and gender less than absolutely sure, and we must therefore content ourselves once more with what is the most plausible assumption. This time, however, we are on somewhat safer grounds. A Greek substantive with a dative in $-\bar{a}i$ ($-\bar{j}āi$ can be excluded in the case of *ke-ra*), if it is neither a name nor an epithet nor an agent/“substantivizing” formation (all of which can be masculines), is to be considered a feminine \bar{a} - stem practically by definition. The safest assumption by far, therefore, is that Myc. *ke-ra* (together with *ke-ra-ja-pi*) points to a fem. $ker\bar{a}$, $-\bar{a}s$ etc. The meaning of this lexical item is unambiguously ‘horn (as a material)’.

14.2 The Greek form by itself does not bring us any further than this. Neither $ker\bar{a}$ nor $kerai\bar{j}o-$ is directly attested in later Greek. For the material ‘horn’, as we have seen, the only post-Mycenaean evidence at all in relatively early Greek is from Homer, where we find the plural forms of κέρα used to refer to the material. There are only three potential⁴⁹ examples of this—all from the *Odyssey*:

τ 211 ὀφθαλμοὶ δ’ ὥς εἰ κέρα ἔστασαν ἢ ἐ σίδηρος

‘but his eyes stayed fixed as horn or iron’

τ 563 αἱ μὲν γὰρ κεράεσσι τετεύχεται, αἱ δ’ ἐλέφαντι

‘one set is made of horn, the other of ivory’

⁴⁹ For κέρα ἀγλαέ (Λ 385) cf. note 30. In the first passage given here (τ 211), it could be that κέρα(’) is literally a plural (‘stood fixed as horns or iron’). But the clearly material use of the plurals κεράεσσι (τ 563) and κέρα (φ 395), along with the parallel construction of σίδηρος ‘iron’ in τ 211 itself, would favor taking κέρα as a material in τ 211.

φ 395 μὴ κέρα ἴπες ἔδοιεν ...

'(to make sure that) worms had not eaten the horn'

What is clear is only that descriptively, the dat.-inst. κέρασσι is the exact functional counterpart of Myc. *kerāi* (*dedemena*), and is presumably its replacement. Both even happen to be found paired, in their respective contexts, with the dat.-inst. of ἔλέφας 'ivory'. Any more detailed account of their relationship is bound to be conjectural, but it seems fair to say that if singular forms of *kerā* have been replaced by plural forms of κέρας in the meaning 'horn (material)', at least in epic usage, one possible channel for a direct replacement is suggested by τ 211 above. The one and only hypothesis that could account for the Mycenaean and Homeric situations simultaneously is that the fem. *ā*-stem *kerā* (as in Myc.) survived until after the epic dialect had already begun to take shape, and became part of the tradition. According to this hypothesis, *kerā* 'horn (material)' would eventually have been eliminated from the language, and preserved in the epics only in phrases like ὥς εἰ κέρα ἔστασαν where the final *-ā* had been shortened in hiatus and was therefore open to re-interpretation as the elided nom.-acc. plural κέραα (: sg. κέρας). As the final step in this hypothetical development, there would have arisen in the epic dialect a "rule" to the effect that plural forms of κέρας might (or must?) be used in the meaning 'horn (material)'. This, of course, would have led directly to cases like κέρασσι (τετεύχεται) in τ 563 and κέρα' (... ἔδοιεν) in φ 395, which are unambiguous *s*-stem plurals. Such a theory has the advantage of allowing for continuity between the Mycenaean and Homeric usages. It must be admitted, however, that there is no guarantee that the development was continuous, and the use of the plural of κέρας in Homer for 'horn (material)' can be explained otherwise. Other putative post-Mycenaean survivals of *kerā* are still more dubious⁵⁰.

But whether or not *kerā* 'horn (material)' is still indirectly observable in Homer, there seems to be little doubt that it was very much alive in Mycenaean.

⁵⁰ It would seem overly audacious to assign the Attic dative κέρα (Thuc.) to an *ā*-stem, both because *-α* datives to several other *-ας* stems also occur, and because these datives could also simply reflect *-a(h)-ei* with the old dative ending. The rarity of *-ei* datives to *s*-stems in Mycenaean (cf. note 29) does not disfavor this, since *-ei* vs. *-i* in any given group of datives might easily be a point on which there could be dialectal diversity. Cf. Schulze *QE*, 49, 511; Meisterhans *Gramm*, 143 note 1238; Schwyzler *GG* I, 515.

15. At any rate, certain secure conclusions may be drawn from the Hittite and Greek material just discussed (§§ 10–14):

1) A comparison of Gk. *kerā* ($\hat{k}er-eh_2$) 'horn (material)' with Hitt. $k(a)rā-$ ($\hat{k}r-eh_2/\hat{k}r-eh_2$), the probable basis of *karā-uar* 'horn(s)', is unavoidable.

2) Since they agree precisely in stem formation and closely in their semantics, there is every reason to suppose that the Greek and Hittite formations jointly reflect a single PIE h_2 - stem with a meaning somewhere in the 'horn' area.

3) Furthermore, it seems safest, from both the Greek and the Hittite points of view, to assume that the h_2 - formation in question was feminine.

4) There is no workable alternative to the view that Hittite and Greek jointly reflect, more specifically, a stem $\hat{k}(e)r-(e)h_2$ - with the root of $\hat{k}or-u-$ and $\hat{k}(e)r-n(o)-$ 'horn', but with the well-established IE abstract-collective suffix $-(e)h_2$. The $\hat{k}ereh_2$ - required by the Mycenaean form cannot be a root either originally or secondarily, and the assumption of *aniṣ* and *seṭ* by-forms ($\hat{k}er-/kerh_2$ -) of the root underlying the entire 'head/horn' group is now out of the question.

5) The PIE formation jointly reflected by *kerā* and *karā-(uar)* almost certainly had a paradigm with *e/zero* root apophony, since the eventual addition of *-uar/-un-* in Hittite, on the available evidence, seems too late to have conditioned a derivational zero grade there. Such apophony in the h_2 - stem itself makes the analysis $\hat{k}er-e-h_2$ for *kerā* (vs. $\hat{k}r-e-h_2$ for *karā-uar*) very unappealing, and there is in any case absolutely no indication in favor of a thematic formation made on $\hat{k}(e)r-$.

Since there does not appear to have been any PIE type of inflection that combined *e/zero* root ablaut with an invariant full-grade suffix, it may be assumed that the $-(e)h_2$ - suffix in the paradigm in question also showed inflectional apophony in the first instance. If the h_2 - stem was feminine, a generalization of $-eh_2$ - ($-ah_2$ -) throughout the paradigm would be self-explanatory in Greek and not particularly surprising in Anatolian. The lack of a reflex of the zero grade suffixal allomorph consequently need not stand in the way of a schematic $\hat{k}(e)r-(e)h_2$ - for the formation continued by the Greek and Hittite h_2 - stem meaning 'horn'. Although the further details of its inflection will not be dealt with until later (§ 32.2), it may already be noted that the most straightforward assumption would be a proterokinetic $\hat{k}er-h_2/\hat{k}r-eh_2$ -.

16. As to the question of the original semantics of the $\hat{k}(e)r-(e)h_2$ - that underlies Mycenaean *kerā* and Hittite *karā(ḡar)*, it is methodologically soundest to give the greater weight to the evidence of the Greek form which, after all, is the direct continuator of the formation in question. At least as a working hypothesis, then, it may be supposed that beside $\hat{k}or-u$ and $\hat{k}(e)r-n(o)$ - 'horn (object)' PIE had a $\hat{k}(e)r-(e)h_2$ - with a meaning something like 'horn (material)'. This leaves two main possibilities for the semantics of *karāḡar* 'horn'. Either inherited $\hat{k}r-eh_2$ - 'horn (material)' simply underwent a semantic change in Hittite from the material to the object that provides it⁵¹, or else the *-ḡar* suffix was added to a $k(a)rā$ - that still denoted the material. In the second case one would be especially inclined to suppose that a semantically related formation like *partāḡar* 'wing' played a role both in the creation of *karāḡar* 'horn(s)' and in determining its (concrete) semantics.

⁵¹ A simple direct semantic shift from substance to object providing that substance is not in fact easy to parallel. If anything, the reverse (object-source to material) is what tends to be found in the case of direct semantic changes in this area (e.g. *ḡidhu*- 'tree' > OHG *witu* 'wood'). But it does happen that a substantive denoting a material comes to refer to a single piece of that material. In Greek, for example, *ἐλέφαντ*- refers only to the substance 'ivory' in Mycenaean, and this is its usual meaning in Homer as well. At Δ 141-2, however, *ἐλέφαντα* unambiguously means 'piece of ivory'. Only slightly different are the numerous instances in which the word for a given material becomes the word for an object made of that material: Gk. *σίδηρος* 'iron' but also 'axe-head, arrowhead, sword, knife, arms' (cf. the similar situation of *χαλκός*), Lat. *fer-rum* 'iron' but also 'sword, weapon' etc. (so also *aes* 'bronze, copper'), *marmor* 'marble' but also '(marble) statue', Ved. *áyas* 'metal' but also 'knife' etc. Invoking the development shown by *ἐλέφας*, it seems possible to suppose that pre-Hittite $k(a)rā$ 'horn (material)' could also have come to mean 'piece of horn'. And a further shift from 'piece of horn' to 'horn (object)' can easily be paralleled: PIE *dóru* most likely meant 'piece of wood', to judge by e.g. Gk. *δόρυ* 'plank, beam, pole, shaft, stick', Ved. *dāru* 'piece of wood, wooden bar', Av. *dāuru* 'piece of wood, club'. But *δόρυ* (cf. ζ 167) and Av. *dāuru* (N. 100) may also mean 'tree trunk'. Precisely the same phenomenon can be observed in the cases of Gk. *ξύλον* 'piece of wood' but also 'tree' and Lat. *lignum* 'piece of wood' and 'tree' (cf. *Aen.* 12.767). If these various terms for 'piece of wood' can take on the meaning 'tree' with a certain regularity, it would not appear unreasonable to admit as a possibility that pre-Hittite $k(a)rā$, once it could mean 'piece of horn', might then have gone on to denote 'horn (object)' as well. This is not to be insisted upon, however, since the *-ḡar* of *karāḡar* can easily be thought of as having been suffixed to a $k(a)rā$ that still meant the substance.

IIb. $\hat{k}r-(e)h_2$ - 'head'

17. Within the entire group of formations in the 'head/horn' category that show $-(e)h_2$ - following the root $\hat{k}er$ -, Greek $\ker\bar{a}$ and Hittite $kar\bar{a}(uar)$ form a subset of their own. In these two forms (and these alone) the $-(e)h_2$ -stem as such means 'horn' in one way or another. The others point to a $\hat{k}r-(e)h_2$ - with the meaning 'head' (the segmentation will be explicitly discussed below—§ 29).

The clearest and most plentiful evidence comes from Greek, where we may begin with $\kappa\acute{\alpha}\rho\eta/\kappa\acute{\alpha}\rho\bar{\alpha}$ (nom.-acc. neut.) 'head' and related forms. This substantive has traditionally been taken as the reflex of a $*\kappa\acute{\alpha}\rho\alpha(h)\alpha < *karas-\eta$. This in turn is supposed to reflect an ultimate $\hat{k}r_2h_2-s-\eta$, putatively a neuter n -stem nom.-acc. belonging with the $\hat{k}r_2h_2sn$ - of Vedic $\acute{s}ir\acute{s}n$ - (the oblique stem of heteroclitic $\acute{s}irah$ 'head'), Greek $\kappa\rho\bar{\alpha}v$ -($\acute{\iota}ov$) 'skull' etc., and OHG $hirn(i)$ 'brain' etc.¹ (IIIb). This interpretation of $\kappa\acute{\alpha}\rho\eta$, however, has practically no chance of being correct. There are both phonological and morphological difficulties.

18. Johannes Schmidt² rejected $\hat{k}r_2h_2s-\eta > \kappa\acute{\alpha}\rho\alpha(h)-\alpha$ as a reconstruction for $\kappa\acute{\alpha}\rho\eta$ on the grounds that $-\alpha(h)\alpha$ - contracts to Ionic $\bar{\alpha}$, not η . In other words, Schmidt's objection is really one of relative chronology: the contraction of the sequence $\alpha(h)\alpha$ to $\bar{\alpha}$ was not early enough for this $\bar{\alpha}$ to undergo the Ionic-Attic fronting of \bar{a} to \bar{e} . At first glance this would seem to be borne out by forms like the $\alpha\zeta$ -stem nom.-acc. plurals in $-\alpha(h)-\alpha$, which appear in Homer either still uncontracted ($\tau\acute{\epsilon}\rho\alpha\alpha$ μ 394) or else elided (from uncontracted $-\alpha\alpha$) or shortened (from contracted $-\bar{\alpha}$) in hiatus (e.g. $\delta\acute{\epsilon}\pi\alpha$, $\sigma\phi\acute{\epsilon}\lambda\alpha$). But such examples do not prove Schmidt's point decisively. For it can be argued³ that these forms had their contraction delayed by the morpheme boundary $-\alpha(h)+\alpha$ (or in other words by the analogical pressure of the "normal" s -stem forms in $-\varepsilon(h)+\alpha$), while putative $\kappa\acute{\alpha}\rho\alpha(h)\alpha$, much less open to such pressure, contracted early enough for the resulting $\kappa\acute{\alpha}\rho\bar{\alpha}$ to become Att.-Ion. $\kappa\acute{\alpha}\rho\eta$ (whence Attic $\kappa\acute{\alpha}\rho\bar{\alpha}$ by reversion). In this view

¹ So Brugmann *MU* 2.228, *Grdr*², 1.202.

² Schmidt *Neutra*, 370. Cf. Risch, *SMEA* 1, 61 note 20; Forssman, *Glotta* 45, 2.

³ So now Peters *Untersuchungen*, 262 f.

$a(h)a > \bar{a} > \tilde{a}$ is not only earlier than $a(h) + a > \bar{a}$ (δεπᾱ etc.), but must also predate $a(h)e > \bar{a}$ (A-I ᾱριστον, not *ᾱρι-, < αιερι-), which is plausible enough if it may be assumed that identical vowels in hiatus tend to contract earlier than non-identical vowels.⁴

In place of the traditional formulation (all instances of \bar{a} by contraction arise too late to become A-I \tilde{a}), it might be just possible then to make a case for the proposition that only $V_1(h)V_1$ with no morpheme boundary (or other interference⁵) contracted earlier than the fronting of \bar{a} to \tilde{a} in Attic-Ionic. At best, however, the case thus made would be a negative one, because actual positive indications in favor of this chronology⁶ are so tenuous that on the whole one seems

⁴ This is a traditional assumption in any case—e.g. Chantraine *Gramm.*, 30, 38 f.; Lejeune *Phonétique*, 258 f.

⁵ Another factor that could delay contraction would be disyllabic structure of the preform which, with contraction, would yield a monosyllable. Cf. Peters *Untersuchungen*, 260, 262.

⁶ Peters (*Untersuchungen*, 260 ff.) rejects the traditional view that $\bar{a} > \tilde{a}$ in Attic-Ionic preceded contraction in original $\tilde{a}(h)\tilde{a}$ sequences, and argues at length that the phonologically regular treatment of $\tilde{a}(h)\tilde{a}$ was 1) contraction to \tilde{a} , and only then 2) fronting of \bar{a} to \tilde{a} in Attic-Ionic. The positive evidence introduced in favor of this revised chronology consists of:

1) Attic $\tilde{r}\tilde{a}$ (and not $\tilde{r}\tilde{a}$) from $\tilde{r}\tilde{a}ha$ (273 ff.). The main example is ῥᾱ 'easily', interpreted as reflecting $\tilde{r}\tilde{a}ha$. The idea here is that since \tilde{a} that comes from $e\tilde{a}$ is not supposed to be subject to "reversion" after r (μέρη, ἐγρηγόρη), a $\tilde{r}\tilde{a}ha$ with the traditional relative chronology of Att.-Ion. fronting and contraction should develop to $\tilde{r}\tilde{a}ha > \tilde{r}\tilde{a}a > \tilde{r}\tilde{e}a > \tilde{r}\tilde{a}$ (Att. *ῥᾱ); but Peters' chronology coupled with the traditional view of reversion would lead to ῥᾱ, the correct form.

2) A hypothetical Ionic *κέρητ- (281) 'horn' (cf. Att. κερᾱτ-) that would be of considerable help in explaining κᾱρᾱ (/__ # V-) 'heads'—*κερητ- : κερᾱτ- = κερᾱ : κᾱρᾱ. And Choerob. has a ὑψικέρητ-. This would reflect κερᾱηατ-.

3) Att. and Ion. γῆ 'earth', according to Peters (281 ff.), is best taken as reflecting $g\tilde{a}i-\tilde{a}$, since only in this way can γῆ vs. γᾱῖα ($g\tilde{a}i-\tilde{a}$ vs. $g\tilde{a}i-j\tilde{a}$) be made a pair like φυγή vs. φύζα, which Peters (following a remark of Schindler's) insists they must be. Here also, the traditional relative chronology would produce the wrong outcome: $g\tilde{a}i\tilde{a} > g\tilde{a}\tilde{a} > g\tilde{a}$ (AI *γᾱ).

Also discussed (277 ff.) as a potential instance of $aha > \text{Ion. } \eta$ is κᾱρη itself (along with the Hom. oblique κᾱρητ-), but Peters ends up rejecting the preform *karaha for κᾱρη (and *karahat- for κᾱρητ-). With this view of κᾱρη and κᾱρητ- I am in complete agreement (on κᾱρητ- cf. § 49.7.2), and for present purposes no more needs to be said here.

But although Peters' revised chronology cannot be adequately discussed in a footnote, it might not be out of place at least to mention a few questions it raises. As to the positive evidence summarized above, it seems to me that only Attic $\tilde{r}\tilde{a}$ as the outcome of $\tilde{r}\tilde{a}ha$ needs to be taken seriously:

perfectly free to keep to the traditional view and thus accept Schmidt's objection to * $\kappa\alpha\rho\alpha(h)\alpha$ as the preform of $\kappa\acute{\alpha}\rho\eta$.

From this point of view, one may give some weight to the Homeric metrical evidence. If one rejects an exceptionally early contraction of $\alpha(h)\alpha$, it is noteworthy that $\kappa\acute{\alpha}\rho\eta$, as Risch⁷ has pointed out, has a consistently irresolvable $-\rho\eta$ in Homer. Not once in approximately forty more-or-less independent occurrences of $\kappa\acute{\alpha}\rho\eta$ do we find a * $\kappa\alpha\rho\alpha\alpha$ CC- comparable to $\tau\acute{\epsilon}\rho\alpha\alpha$ $\pi\rho\acute{o}\epsilon\phi\alpha\iota\nu\omicron\nu$ (μ 394) or more generally to

1) As useful as an Ionic $\kappa\epsilon\rho\eta\tau$ - might be in explaining $\kappa\acute{\alpha}\rho\acute{\alpha}$ (' heads' (but cf. § 49.10), no such stem is found until very late, and even then it is probably to be taken as representing a $-\kappa\epsilon\rho\eta\varsigma$ / $-\kappa\epsilon\rho\eta\tau$ - (for $\kappa\acute{\epsilon}\rho\alpha\varsigma$: $-\kappa\epsilon\rho\eta\varsigma$ cf. $\sigma\acute{\kappa}\epsilon\pi\alpha\varsigma$: Hom. $\acute{\alpha}\nu\epsilon\mu\omicron\sigma\kappa\epsilon\pi\acute{\eta}\varsigma$) with secondary t -inflection of the oblique (for which cf. $-\kappa\epsilon\rho\omega\varsigma$ (< $-\kappa\epsilon\rho\alpha$ - h - o -) : $\delta\iota\kappa\acute{\epsilon}\rho\omega\tau$ - *H. Hymn*). A late $-\kappa\epsilon\rho\eta\varsigma$ 'horned' is also implied by Aratus' $-\kappa\epsilon\rho\eta\sigma$ / $-\kappa\epsilon\rho\eta\alpha$. Cf. § 46.3. In any case, it is very unlikely that a $\kappa\epsilon\rho\alpha\tau$ - existed already in proto-AI (before $\bar{a} > \tilde{a}$) if Hom. still has $\kappa\acute{\epsilon}\rho\alpha\iota$, $\kappa\acute{\epsilon}\rho\alpha$, $\kappa\epsilon\rho\acute{\alpha}\omega\nu$ without exception.

2) It is quite convincing that $\gamma\eta$ and $\gamma\alpha\tilde{\iota}\alpha$ should reflect $gaj\tilde{a}$ and $gaj\tilde{i}a$ if their relationship is that of $\phi\upsilon\gamma\eta$ and $\phi\acute{\upsilon}\zeta\alpha$, but it is simply a conjecture that the two pairs are in fact parallel in this way. One could just as well say that $\gamma\eta$ is to $\gamma\alpha\tilde{\iota}\alpha$ as $\pi\epsilon\zeta\acute{o}\varsigma$ 'on foot' ($pedjo$ -) is to $\pi\epsilon\delta\acute{\iota}\omicron\nu$ 'plain' ($pedijo$ -) -cf. addendum to § 38.1- and reconstruct geh_2 - $i\tilde{e}h_2$ (> $gaj\tilde{a}$) beside geh_2 - $i\tilde{e}h_2$ (> $gaj\tilde{i}a$). One would then suppose that $gaj\tilde{a}$ yielded $\gamma\eta$ directly and that $gaj\tilde{i}a$ ($gaj\tilde{i}as$ etc.) was remodelled to $gaj\tilde{i}i\tilde{a}$ ($gaj\tilde{i}i\tilde{as}$ etc.) because of $a\tilde{\iota}\alpha$ and $\mu a\tilde{\iota}\alpha$. If $\gamma\alpha\tilde{\iota}\alpha$ can reasonably be taken as a rearrangement of $\gamma\eta$ itself under the influence of $a\tilde{\iota}\alpha$ and $\mu a\tilde{\iota}\alpha$ (e.g. Chantraine *DELG* sv $\gamma\eta$), it would seem even easier to assume a remodelling of a hypothetical $gaj\tilde{i}a$ to $gaj\tilde{i}i\tilde{a}$.

3) As examples of Attic $\bar{r}a$ from $\bar{r}a\tilde{h}a$, Peters gives $\acute{\rho}\tilde{\alpha}$ (as above), but also Attic $\kappa\rho\tilde{\alpha}\tau$ - 'head' (oblique) < $\kappa\rho\tilde{\alpha}h\alpha\tau$ - and forms of the type $(-)\kappa\rho\tilde{\alpha}\nu(1)0$ - (273 ff.). But there is no compelling reason for deriving Att. $(-)\kappa\rho\tilde{\alpha}\nu$ - from $\bar{r}a\tilde{h}an$ - instead of $\bar{r}a\tilde{h}n$ - < $\bar{r}h_2sn$ - (and for Thess $\kappa\rho\tilde{\alpha}\nu0$ - rather than * $\kappa\rho\tilde{\alpha}\nu\nu0$ - cf. Peters *Untersuchungen*, 246 note 201). In any case, $\kappa\acute{\alpha}\rho\alpha\nu\nu\omicron\varsigma$ (Hsch.-§§ 49.4, 49.6 c) unambiguously points to $\bar{r}a\tilde{h}n$ - (rather than * $\bar{r}a\tilde{h}an$ -) < $\bar{r}h_2sn$ -. And as Peters correctly implies at least (274), the oblique $\kappa\rho\tilde{\alpha}\tau$ - of the tragedians could easily be simply lifted from Homer (where it could be an Aeolism). In that case the Attic nom.-acc. $\kappa\acute{\alpha}\rho\tilde{\alpha}$ would have been defective (as far as genuine Attic forms are concerned)-and thus parallel to Ionic $\kappa\acute{\alpha}\rho\eta$ (beside which no trace of * $\kappa\rho\epsilon\alpha\tau$ - or * $\kappa\rho\eta\tau$ - is found).

This leaves Attic $\acute{\rho}\tilde{\alpha}$ as the one and only piece of evidence supporting the anteriority of $\tilde{a}(h)\tilde{a} > \bar{a}$ to $\bar{a} > \tilde{a}$ in a positive way. I do not at the moment have anything very satisfactory to suggest about $\acute{\rho}\tilde{\alpha}$, but I am not completely convinced that a view of reversion like the one proposed by H. Phelps Gates (*Glotta* 54, 44-52) is impossible. In any case, if the positive case to be made in favor of Peters' revised chronology consists in Attic $\acute{\rho}\tilde{\alpha}$ alone, it seems reasonable to suspend judgment for the moment. As to Peters' arguments against the probative value of those forms that would seem at first glance to support the traditional relative chronology ($\bar{a} > \tilde{a}$ before $a(h)a > \bar{a}$), no discussion can be accommodated here.

⁷ *SMEA* 1, 61 note 20.

the numerous traces of a thematic genitive in *-oo* (e.g. Z 61 + ... ἀδελφείου φρένας ... = ἀδελφεόο φρένας etc.).⁸

19.1 Morphologically speaking, a nom.-acc. $\hat{k}r h_2-s-n$ is very unexpected in the first place both from a PIE point of view and within Greek. In PIE terms a neuter paradigm $\hat{k}r h_2-s-n/\hat{k}r h_2-s-n-es$ (Skt. *śīrṣ-ṇāḥ*) would be rare to the vanishing point.⁹ There seem to have been only three types of stems in *-(e)n-* that formed neuters at all: 1) neuter *-m(e)n-* stems; 2) heteroclitic neuters (*r/n*, *l/n*, perhaps a very few in *zero/n* or *x/n*—see above § 7); and 3) neuters with a lengthened grade suffix (generally *-ōn*) in the nom.-acc. and original collective function (e.g. $h_2e/ost-$ $h_2e/ost-n-$ 'bone': collective $h_2est-ō(n)$ > Welsh *eis* 'ribs', and $h_2eys-(o)s/h_2(e)ys-(s)-n-$ 'ear': collective $h_2eus-ō(n)$ > Goth. *ausō* etc. 'ear' as a purely formal replacement of the noncollective. The collective force of such Germanic formations has disappeared).

In short the only clearly constructable neuter nominative-accusatives in *-n* are those in *-mṇ* (e.g. *ter-mṇ* in Skt. *tárma*, Gk. τέρμα, L. *termen* etc.). The heteroclitics exclude *-(e)n-* from the nom.-acc. by definition, and the collectives have lengthened grade. There are practically no exceptions.¹⁰ And even if a very few primary-looking neuters

⁸ Cf., e.g., Chantraine *Gramm*, 45. One might try explaining the distinction by supposing that a putative **κάραα* had a less palpable morpheme boundary (**καρα-α*) than did genitive *-oo*. But even this is questionable.

⁹ For the Vedic situation cf. Lanman, *JAOS* 10, 530.

¹⁰ Some apparent cases are probably secondary in one way or another. This is clear for Ved. *párva* 'joint' (cf. Hoffmann *Aufsätze* 1, 331 ff. = *Die Sprache* 20, 19 ff.). And in any case this would have been a *-mṇ* rather than an *-n* formation. Since non-neuter *n*-stems can end up with a Latin nom. *-ēn* (*flamen*, *lien* : Leu² 364, *pecten*), it is entirely possible that neuter *inguen* 'groin, swelling (on the groin)' formally continues the exact correspondent of Gk. fem. (> masc.) ἄδην 'gland' (< *ng^hén*), and has merely changed gender (by assimilation to semantically related *abdomen* 'belly'?). In any event, *pollen* (acc. *pollinem* Cato +) 'flour, dust' also seems to be neuter only secondarily (and would in any case probably represent a descriptive *-mṇ* rather than *-n* in view of *puluis* 'dust' and Gk. παλύνω 'sprinkle (grain)'. If the OLat neut. *sanguen* 'blood' belongs with PIE $\check{e}sh_2-y/-n-$ (Ved. *ásyá*, Hitt. *ešhar*), then it is a Latin rearrangement of an original *r/n*-stem by definition.

In other cases, *Root-n* neuter nom.-accusatives are found without outside correspondents and therefore need not be inherited (even when a root etymology is available). This may apply, for example, to Lat. *gluten* 'glue', as well as to virtually all the Hitt. neuters of the type *henkan-* 'Tod(esfall), Seuche', *nahhan-* 'Verehrung', *šahhan-* 'Lehen(sdienst)' (Kronasser *Etym*, 269 f.). A possible exception is *takšan-* 'Fuge' (: Gk. τέκτων etc.), but in any case the type consists of deverbative abstracts in practically all the clear cases, and thus offers little real support for a putative * $\hat{k}r h_2-s-n$ 'head'. Hitt.

with a nom.-acc. of the structure *Root- η* did exist at some point, there seem to be absolutely none with the structure displayed by the proposed $\hat{k}r\text{-(}e\text{)}h_2\text{-}s\text{-}\eta$: i.e. a secondary (or even tertiary) formation consisting of *Root* + *Suffix(es)* + η .¹¹

tekan 'earth' (: Gk. $\chi\theta\acute{o}\nu$ etc.) was not originally neuter (Schindler, *Die Sprache* 13, 191 ff.). Nor, of course, was it even an *n*-stem, strictly speaking.

Gk. στόμα 'mouth' beside στωμός 'talkative' and YAv. acc. *stamanam* 'mouth (of a dog)' would at first glance seem best analyzed *stom- η* : *stōm-ulo-* : *stem-ōn*. But this is not the only possibility, and in fact the apparent $\nu\delta\eta\eta$ in στωμός would be hard to account for in any precise way—especially in a formation that is likely to be a Greek creation that is "familiar" in tone (Cf. Chantraine *Formation*, 250 '... l' \acute{o} long est embarrassant').

One might then think of starting with a *steh₃-m η* that developed to Gk. στόμα just as *h₁neh₃-m η* 'name' (Ved. *nāma*, Lat. *nomen* etc.) developed to ὄνομα. Neuter *men*-stems (originally *-m η /-men-*) seem to have gone through a stage in Greek at which they had *-m η* in the nom.-acc. sg. and *-mn-* or *-m η -* elsewhere (cf. βέλεμνα < *g^helh₁-m η -h₂* and cf. Peters *Untersuchungen*, 244 note 198—though it may be noted that Gk. evidence for an oblique stem *k η h₂sn-* is consistent with, but in no way requires, an older oblique *k η h₂sen-*). Only after the *-m η /-mn-* or *-m η -* stage did the *-m η /-m η t-* type of paradigm (> *-μα/-ματ-*) arise. This would accommodate the hypothesis that the relatively early Gk. obliques *enō-mn-* 'name' and *stō-mn-* 'mouth' (with Sievers' Law already inoperative) were shortened to *enō-mn-* and *stō-mn-* by Osthoff's Law (for an instructive discussion of early and late episodes of Osthoff's Law see Peters *Untersuchungen*, 306 ff.). This would have given rise to the paradigms *enōma/enōmn-* and *stōma/stōmn-*, and one would then say that the short *o* was eventually generalized to the nom.-acc. sg. at least in these two cases. It could then be supposed that while the paradigm still alternated between *stōma* and *stōmn-* (or even *stōma* and *stōmat-*?), a *stōmulo-* was derived from the nom.-acc. *stōma* (comparable, though not precisely parallel, to αἶσα : αἶσυλος). Finally, Avestan *staman-* could simply represent *sth₃- η mēn*. For a neuter *-m η* beside a non-neuter *-mēn* with the same meaning cf. Ved. neut. *syūma* 'binding' : Gk. masc. ὑμήν 'membrane'.

The most convincing example of a potentially inherited neuter with the structure *Root- η* in the nom.-acc. is Latin *unguen* 'fat, ointment' : OIr *imb* 'butter' : OHG *ancho* 'butter' etc. The OHG form is masc., but secondarily so (cf. neut. L. *nomen* etc.: masc. OHG *namo*). The indications thus seem to point to a *h₃eng^h- η /h₃ η g^h-en-*, very likely a verbal abstract in origin to the nasal-infix pres. *h₃ η -ne-g^h-/h₃ η -n-g^h-* (> Ved. *anak-/anī-*, Latin *unguo*), and therefore perhaps comparable to the Hitt. *henkan* type mentioned earlier. A striking circumstance is that Gk. ἄλειψα/-ατ-, another apparent (though isolated) example of the rare type in question, means exactly the same thing as *h₃eng^h- η* 'unguent'.

¹¹ Greek $\chi\epsilon\iota\mu\alpha$ 'winter, cold' could be analyzed, descriptively, as reflecting *g η ei-m- η* (*R* + *S* + *n*), i.e. the *m*-stem *g η (i) \acute{e} m/g η i-m-* 'winter' (L. *hiem(s)*, Av. *ziid/zim-*) plus an additional *- η* . But there is no need to reconstruct a neuter substantive *g η ei η m η* . One could easily suppose that from *g η i-m-* was derived a locative *-en* formation *g η ei η m-en* (§§ 50.3 ff.), whence Ved. *hēman* 'in winter', and that from this locative *g η ei-*

19.2 This is especially clear within the class of formations of which a $\acute{k}f h_2-s-n$ would have been a central member—the neuter body part terms which have been secondarily suffixed with $-(e)n-$. Nothing is more consistent in this group of formations (both those that have a chance of being inherited with $-(e)n-$ and those that do not) than the exclusion of $-n$ from the neuter nom.-acc. singular. The examples are all familiar. Some cases in which a given language directly attests a secondary heteroclitic paradigm of this sort:

	<i>nom.-acc. sg.</i>	<i>n-stem</i> ¹²
'eye'	RV <i>ákṣ-i</i>	RV g.-abl. sg. <i>akṣ-ṇ-áh</i> , n.-a. pl. <i>akṣ-án-i</i> etc.
'mouth, face'	(RV <i>ās-íyam</i> ¹³)	RV inst. sg. <i>ās-n-á</i> , loc. sg. <i>ās-án</i> etc. ¹⁴
'bone'	AV <i>ástḥ-i</i>	RV inst. pl. <i>asth-á-bhiḥ</i> , AV g.-abl. sg. <i>asth-n-áh</i> etc.
'forearm'	RV <i>dóḥ</i>	AV nom. du. <i>doṣ-án-ī</i> , ŚB g.-abl. sg. <i>doṣ-ṇ-áh</i> ¹⁵
'thigh'	RV <i>sákth-i</i>	RV nom.-acc. pl. <i>sakth-án-i</i>
'knee'	Gk. γόνυ	Hom. + gen., dat. sg.; whole plural made on γονϜ-α(τ)- < <i>gon-u-ṇ</i> - ¹⁶
'ear'	Gk. οὖς (< <i>oṷs-os</i>)	Hom. + οὖ-α(τ)- (< <i>oṷs-(s)-ṇ</i> -)

men, re-interpreted as the endingless locative to a *men*-stem, there was back-formed an actual *ghejmn̥* in Greek. This view of $\chi\epsilon\iota\mu\alpha$ was suggested to me by J. Schindler.

¹² Some of these oblique stems in $-n-$ have at least vague parallels elsewhere, and may therefore result from a process that had at least begun to take place in the late stages of the protolanguage. Ved. *asth-n-* 'bone', for example, is reminiscent of some Celtic forms like OIr *asn(a)* 'rib', while Gk. οὖατ- 'ear' can be paralleled, up to a point, by Arm. *un(kn)* and Gmc. *ausan-* (but cf. § 54). In other cases, however, not even such vague comparanda are available. Ved. *ās-n-* 'mouth' and *doṣ-ṇ-* 'forearm' are unique stem formations, and *sakth-n-* 'thigh' is of obscure root etymology in addition.

¹³ The Ved. nom.-acc. *āśīyam* 'mouth' differs from cases like *ákṣi* 'eye', *dóḥ* 'forearm' etc. in that the stem *āśīya-* is not restricted to the nom.-acc. in RV (inst. *āśīyena*, abl. *āśīyāt*, and (the most frequent form of all) loc. *āśīye*).

¹⁴ But also still RV g.-abl. *ās-ás*, inst. *ās-á*.

¹⁵ Oblique forms made on *doṣ-* are later (W-D 3, 317f.).

¹⁶ Forms of *jānu* 'knee' like VS nom.-acc. du. *jānun-ī* and AV gen. du. *jānun-oḥ* have, of course, no connection with Gk. γοννατ- in particular nor with the type *akṣṇ-* 'eye', *ās-n-* 'mouth' in general.

Some non-body part terms show the same pattern, of course (e.g. ŚB $yūh$ /RV $yūś-(a)n$ - ‘soup’ etc.), and these also show no tendency to extend $-n$ to the nom.-acc. sg. If, therefore, the Vedic paradigm $śírah/śírś-(a)n$ - (< $\hat{k}r h_2$ -os/ $\hat{k}r h_2$ -s-(e)n-) exactly conforms to that of $\bar{a}s$ -/ $\bar{a}s$ -(a)n-, oŭs/oŭ-α(τ)- etc. in this respect, a hypothetical nom.-acc. $\hat{k}r h_2$ -s-n, if it is to be assumed at all, would practically have to be considered a Greek innovation.

19.3 But parallels are lacking in Greek just as completely as elsewhere.¹⁷ Neither has oblique oŭ-α(τ)- led to a new nom.-acc. *οŭα, nor, at a later date, have eventual γονF-α(τ)- and δορF-α(τ)- produced nom.-acc. singulars *γονFα and *δορFα. The immunity of the nom.-acc. neuter in Greek to analogical pressures of this kind from a suppletive stem in -ατ-¹⁸ may be further illustrated by the retention of the nom.-acc. sg. in -ας (τέρας etc.) after the remodelling of -α(h)- to -ατ- elsewhere in the paradigm. And it may even be worth mentioning that when the oblique stem καρήατ- (an artificial Homeric creation in the first place—see below § 49.9) finally was provided with a new nom.-acc. sg., it was (the still more artificial) κάρηαρ (Antim.), not *κάρηα. We may also note that the inherited πε(ι)ραρ/πε(ι)ρατ- was remodelled to πε(ι)ρας/πε(ι)ρατ-. A nom.-acc. *πε(ι)ρα was never produced.

19.4 Furthermore, if a Greek *κάρα(h)-α must be an innovation and not inherited, it would presumably have to have been based on an oblique καρα(h)-ατ-. But there is no direct evidence for this oblique as such, while the only possible indirect traces (Homeric καρηατ- with

¹⁷ So Risch *SMEA* 1, 61 note 20. Only ἄλειφα (classified as “unsicher” by Risch) is difficult to explain away. Peters (*Untersuchungen*, 278) now points out that μήν, χήν/χάιν, and χεῖρ represent oblique stem allomorphs eventually introduced into the nom. sg. But when all is said and done, we still lack a single example of the analogical spread of the pattern -α/-ατ- to a paradigm which always had oblique -ατ- (or its predecessor), but a nom.-acc. other than -α.

¹⁸ It would be difficult to make a convincing case for the proposition that ἄλειφα was created in this way as a replacement of ἄλειφαρ. The earliest guaranteed occurrence of ἄλειφα is in Hippon. 54 (then in Call., Q.S., Nonn.). It is transmitted for Aeschylus at *Ag* 322. ἄλειφαρ, on the other hand, is never metrically certain (hexameter line-end at ζ 220 as a v. 1., Hes. *Th* 553 (v. 1. ἄλειφα), Theocr., Opp.). Cf. *Theogony* ed. M. L. West, 321. Although “... it is hard to believe that ἄλειφα has been so consistently displaced in MSS. by a false form” (so West), nothing stands in the way of supposing that a linguistically genuine ἄλειφαρ replaced older ἄλειφα (and cf. the end of note 10) precisely because ἄλειφα/-ατ- was so anomalous.

Ionicized metrical lengthening?¹⁹ Homeric $\kappa\alpha\rho\eta\tau$ - with contraction and Ionicization?) can be interpreted in other ways²⁰—and probably should be since the development and preservation of the doublets $*\kappa\alpha\rho\alpha(h)\text{-}\alpha\tau$ - and $\kappa\rho\bar{\alpha}(h)\text{-}\alpha\tau$ - side by side would itself at least call for some comment (see below § 49).

20. Finally, the reconstruction $*\hat{k}rh_2\text{-}s\text{-}\eta > *\kappa\alpha\rho\alpha(h)\alpha$ for $\kappa\acute{\alpha}\rho\eta$ is made practically impossible by Mycenaean (PY Ta 711.2, 3) $qo\text{-}u\text{-}ka\text{-}ra$ (= $g^uou\text{-}k(a)r\bar{a}(s)$), a compound describing a vessel ($qe\text{-}ra\text{-}na$) as 'ox-headed, with an ox head'.²¹ This $-ka\text{-}ra$ points conclusively to a Greek stem $k(a)r\bar{a}$ for 'head' that cannot be contracted from $*\kappa\alpha\rho\alpha(h)\alpha$ —both on the general grounds that there are no cases in which $-VhV$ - has already contracted in Mycenaean and, more specifically, because the inst. pl. of 'head' in Mycenaean is found written $ka\text{-}ra\text{-}a\text{-}pi$ (Ta 722.2), representing $kr\bar{a}\bar{a}(p)phi < kr\bar{a}(h)\text{-}a(t)\text{-}phi$. In other words, the contraction in the proposed development $*\kappa\alpha\rho\alpha(h)\alpha > \kappa\rho\bar{\alpha}$ has clearly not yet taken place in the very stem in question.²² $\kappa\acute{\alpha}\rho\bar{\alpha}/\kappa\acute{\alpha}\rho\eta$ must therefore directly continue the $k(a)r\bar{a}$ which Myc. has in any case, since a preform $*\kappa\alpha\rho\alpha h\alpha$ is difficult to justify morphologically, and is phonologically problematical at the very least (§§ 17–19).

21. The indications are, therefore, that $\kappa\acute{\alpha}\rho\eta/\kappa\acute{\alpha}\rho\bar{\alpha}$ does not reflect a $*\kappa\acute{\alpha}\rho\alpha(h)\alpha$, and in particular that its final $-\bar{\alpha}$ does not stem from contraction. This in turn leads to the conclusion that $\kappa\acute{\alpha}\rho\eta$ is a neuter nom.-acc. that continues $\hat{k}r\text{-}\check{e}h_2$ (an alternant of $\hat{k}r\text{-}\check{e}h_2$ by Lindeman's Law), our first indication that descriptively, at any rate, we should operate with a $\hat{k}r\text{-}(e)h_2$ - 'head' beside $\hat{k}(e)r\text{-}(e)h_2$ - 'horn (material)'. There is comparative evidence that must be aligned in some way with $\kappa\acute{\alpha}\rho\eta$ ($\hat{k}r\text{-}\check{e}h_2$) 'head'. But first there remain to be mentioned the compositional forms of $\kappa\acute{\alpha}\rho\eta$ in Greek itself. Some of these are of special interest.

22.1 The simplex as such occurs as the first member of the compounds $\kappa\alpha\rho\eta\text{-}\beta\alpha\rho\acute{\epsilon}\omega$ (Arist. +) 'be drowsy; act drunkenly; be top-heavy' (cf. $\kappa\alpha\rho\eta\text{-}\beta\alpha\rho\acute{\eta}\varsigma$ 'drowsy' prob. 1. Hp. *Epid.* 3.6 +), $\kappa\alpha\rho\eta\text{-}\beta\alpha\rho\acute{\iota}\alpha\text{-}\acute{\iota}\eta$ (Hp., Arist.) 'drowsiness, headache', $\kappa\alpha\rho\eta\text{-}\beta\alpha\rho\acute{\iota}\alpha\omega$ (Ar. *Fr.* 792 *ap.* Poll. 2.41) etc. The appearance of $\kappa\alpha\rho\eta$ - rather than Attic

¹⁹ Risch, *SMEA* 1, 61.

²⁰ See §§ 49.7, 49.9 below.

²¹ *Docs*², 335; Peters *Untersuchungen*, 235–6 with reference to Peruzzi, *Minos* 14, 183.

²² This point is now explicitly made by Peters *Untersuchungen*, 280.

καρᾱ- even in Aristophanes and Aristotle indicates that these compounds are borrowed from Ionic—not implausible given that they are medical terms.

22.2 But καραι-βαράω (Pherecr. 218 codd. Eust.), if genuine, is not so much the Attic correspondent as an example of a not uncommon -ᾱ (-η) vs. -αι alternation in first compound members that arises in more than one way.

One formal model for this alternation is provided by a few Caland's Law forms. An original pairing like simplex χαλαρός 'slack' (Hp., Ar., etc.): compound χαλί-φρων 'thoughtless' (Hom. +) was remodelled²³ to χαλα-ρός : χαλα-ι- (e.g. χαλαί-πους 'lame'—Nic.), apparently on such models as κυδ-ρός 'renowned': κυδ-ι-(άνειρα). This, naturally, would lead to the creation of new first members in -αι-. So, for example, μιάρός 'defiled' (Hom. +) acquired a μαι-φόνος 'having (committed) foul murder, murderous' (Hom. +), which replaces μη-φόνος (Archil. 18), originally a compound of the structure: intransitive root (aorist) stem plus noun. To *μιᾱ-φόνος 'having (committed) a murder which is foul' cf., e.g., τλά-θυμος 'having a spirit which is enduring' (Pi. +), and for the intransitive root aorist cf. Cyren. aor. subj. μαι (SEG 9.1.72.40, 41) 'becomes impure'. This first member μαι- 'foul' could then function synchronically as a kind of passive deverbative form ('befouled') of the transitive present μαιίνω 'befoul' (Hom. +). This led to extensions typified by ἀλθαίνω (Hp. +) 'heal' : Ἀλθαι-μένης (PN Cos, Ephesus) beside Ἀλθη-μένης (PN Thasos). On the other hand, the functional equivalence of μαι- and μη- in compound would make possible a τλαι- (παθές ταλαίπωρε Hsch.) beside τλᾱ-/τλη-, or Λαι-κλῆς (PN) beside λᾱ-καταπύγων (Ar.) with 'intensive' λᾱ-. Eventually an alternation -ᾱ : -αι arose also (τλᾱ- : τλαι- etc. → ταλα- : ταλαι- or χάλα-σ(σ)α : χαλαι- → τάλα-σ(σ)α : ταλαι-; cf., in any case, ταλα-κάρδιος etc. : ταλαί-φρων etc.); thus κάρτα 'strongly' : καρταί-πους/κραταί-πους etc., ἰθα-γενής : ἰθαι-γενής, and so on. But it is only the -ᾱ (-η) : -αι type that is directly relevant to καρη-βαρέω etc. vs. καραι-βαράω, although the pattern of developments so far mentioned can have provided only a purely formal model for the creation of a καραι- beside καρη-/καρᾱ- as first compound member.

²³ First members of the type χαλαι- (and their relationship to the type χαλι-) have been variously interpreted. For references to the older literature cf. Schwyzer GG 448. The explanation adopted here goes back to Wackernagel (*Verm. Beitr.*, 9).

22.3 An alternation of -ᾱ (-η) and -αι in first compound members that is of a completely unrelated origin is the introduction of *ā*-stem locatives in -αι into compounds. This occasionally occurs with other stem types as well (e.g. Hom. Πυλοι-γενής, Pi. ὀρεΐ-κτιτος etc.), and compounds with χαμαι- (e.g. Hom. χαμαι-εὖνης, Hom. h. χαμαι-γενής, A. χαμαι-πετής) seem to have exerted a special influence in the creation of such forms as Θηβαι-γενής 'born at Thebes' (E) beside Θηβᾱ-γενής 'Thebes-born' (Hes.). Occasionally a compound form in -αι of an *ā*-stem does not even have the force of a locative—e.g. γυνή : γυναι-μανής 'mad for women' (Hom.), although it is very probable that in this case still other factors (oblique γυναικ-) played a role as well.

22.4 Yet another phenomenon that may have something to do with the creation of καραι- beside καρη- is exemplified by the pair λήθ-αργος (originally an adjective 'inactive'²⁴) 'sleeping (sickness), lethargy' (Hp. +) beside remodelled λαίθ-αργος 'shiftless' (S., Ar.).²⁵ It is generally supposed that this alteration in vocalism was made under the influence of a set of terms, familiar in tone, that denote undesirable

²⁴ λᾱθ- / ληθ- eventually becomes simply a privative. So in λᾱθάνεμος 'windless' (Simon. 12.3), λᾱθίπονος 'free from troubles' (S. Tr. 1021). In the same way, λήθ- / λαίθ-αργος may be taken as equivalent to *ἄν-αργος.

²⁵ The expression σαίνεις δάκνουσα καὶ κύων λαίθαργος εἶ—or some version of it (σαίνεις δάκνουσα schol. Ar. Eq. 1031, 1068 vs. σαίνουσα δάκνει Eust. Od 1493.32 ff. vs. σαίνουσα δάκνειν Sueton.)—is said to be proverbial by schol. Ar. Eq. 1031, 1068 (whence Suidas s.v. λαίθαργος). Eustathius and Suetonius attribute it to Sophocles (Frag. 885 Pearson). But an unmistakable reference to the proverb already in Hipponax (see below) makes it clear that it was not Sophocles' invention.

Later commentators on λαίθαργος, at any rate, have it that the word actually means 'biting treacherously while fawning' (with or without the further information that it can be applied to treacherous people): schol. Ar. Eq. 1031, 1068; Eustath. Od 1493.32 ff.; EM 558.38. This definition of λαίθαργος merely repeats what is conveyed by σαίνεις δάκνουσα in the proverb itself, and this might make one question its absolute accuracy. Furthermore, λάθαργος and/or λήθαργος are also said to mean 'biting treacherously' (Sueton., Eustath., Phryn., Hsch., Suid., et al.), while Eustath. (Od 1493.32 f.) claims that λάθαργος (and λαίθαργος) are different from λήθαργος, which does not really seem likely (cf. Chantraine DELG, Frisk GEW s.v. λαίθαργος).

But that a λαίθαργος κύων really was at least thought to be a treacherous dog early on is made very likely by Ar. Eq. 1068 and Hippon. 66 (West IEG). Perhaps it would be best to assume that λάθ- / λήθ- / λαίθ-αργος originally meant 'worthless' (by way of 'indolent, shiftless'—cf. λήθαργος 'forgetful' AP 5.151, 'lethargy' Hp +; ληθαργία 'drowsiness' Com. Adesp.; etc.). In that case, it might be that the proverb originally meant 'You bite while fawning and are a worthless dog', but λαίθαργος (because of its well-known occurrence in that saying) always had (and was intended to have) a nuance of treachery in its few other occurrences.

physical and personal characteristics and all share αι vocalism—e.g. βλαιοός 'bent, splay-footed', λαιδρός 'impudent', ῥαιβός 'crooked' (usually of legs) etc. If λήθ-(αργος) has in fact been deformed to λαιθ- in this way, it does not seem impossible that the influence of such terms was also partly responsible for καραι-βαράω which, after all, is a term for a physical disability—and cf. χαλαί-πους 'lame' (as above) for an intersection of the first group of developments mentioned above with the last. But purely morphological models for καραι- were present in any case, as we have seen (μῆ- : μῆαι-, τλη- : τλαι-, Ἀλθη : Ἀλθαι-; Θηβᾶ- : Θηβαι-, γυνή : γυναι-).

23. While Ionic καρη- appears consistently in the compounds mentioned above (§ 22), the reverse is found in the case of καρᾶ-δοκέω (Hdt., Ar., E., etc.) 'await the outcome (of), look expectantly (at, for)',²⁶ where the occurrence of καρᾶ- in Herodotus would appear to show that this verb was borrowed by Ionic (probably from Attic).²⁷ The only alternative, that of assuming the preservation here in compound of $\hat{k}r_2h_2s\eta$ - (> $\kappa\acute{\alpha}\rho\acute{\alpha}h\acute{\alpha}$ - > Attic and Ionic καρᾶ-), a very archaic form of the suppletive oblique stem of κάρη,²⁸ is superfluous in view of the compounds in καρη-. And whatever objection can be made to taking καρᾶ-δοκέω as a loan word in Ionic loses some of its force because of the occurrence of another obvious, and related, loanword there: ἐπικρατίδες (Hp.) 'head-dress' with -κρᾶτ- (not necessarily Attic) for theoretically expected Ionic *-κρητ-²⁹ (< -κρεᾶτ- < -κρηατ-). Finally, the normal Attic simplex is the first member of the compound καρᾶτομος 'cut from the head' (S.); 'beheaded' (E. +).

24.1.1 Not all compound forms of κάρη, however, are identical to a form of the simplex. The first member of the compound κρήδεμνον

²⁶ For the semantics of παραδοκέω, Frisk (*GEW* s.v.) points out that the first member presumably has object function, to judge by δωρο-, ξενοδοκέω etc. For κάρα / κάρη 'head' in the meaning 'outcome, issue' cf. the denominative κραίνω 'accomplish'.

²⁷ According to Wackernagel (*SpU* 3, note 1), παραδοκέω might be only an Atticism of the transmission.

²⁸ If so, this Attic and Ionic καρᾶ- as first compound member would have been generalized from (lost) compounds that originally had accented $\hat{k}r_2h_2s\eta$ - as the first member. In any case, this would have been the oblique stem of the simplex for 'head', since a nom.-acc. * $\hat{k}r_2h_2s\eta$ is implausible (§§ 17 ff.).

²⁹ This expected Ionic form of the oblique to κάρα / κάρη is never found as far as I can tell. It could well be that κάρη has been a defective nom.-acc. in Ionic for some time. If so, the appearance of the analogical dative κάρη already in Theognis (1024 West *IEG*) would not be surprising. Cf. III b, note 32.

(Hom. +) 'head-wrap' is traditionally connected with the $\kappa\acute{\alpha}\rho\eta$ group, although the details of its further interpretation have been a matter of dispute.³⁰ Some of the difficulties disappear, however, once it is made clear that $\kappa\eta\acute{\eta}\delta\epsilon\mu\nu\nu$ is not the only compound with this first member.

24.1.2 There are at least two³¹ other probable cases of compounds in $\kappa\eta\acute{\alpha}/\kappa\eta\eta-$. The first of them is $\kappa\eta\acute{\eta}\gamma\nu\omicron\varsigma$ (Hom. +) 'agreeable, useful, effective'.³² Schwyzler had already proposed³³ taking this as a compound with $\kappa\eta\eta-$ 'head' as the first member. For the second member, however, Schwyzler's suggestion amounts to identifying it with $\gamma\upsilon\acute{\iota}\omicron\nu$, - α and giving the compound an original meaning 'having a head and hands'. To this it may be objected (with, e.g., Chantraine, *DELG s.v.*) that $\gamma\upsilon\acute{\iota}\alpha$ really means 'limbs, body' rather than 'hand(s)'. In addition, a thematic simplex $\gamma\upsilon\acute{\iota}\omicron\nu$ would be expected to appear as - $\gamma\upsilon\iota\omicron\varsigma$ / - $\gamma\upsilon\iota\omicron\nu$ as the second member of a possessive compound in the first place.

In fact, the - $\gamma\nu\omicron\varsigma$ of $\kappa\eta\acute{\eta}\gamma\nu\omicron\varsigma$, if we continue to consider the possibility of a compound for the moment, is most immediately reminiscent not of $\gamma\upsilon\acute{\iota}\omicron\nu$ /- α , but of the substantival stem - $\gamma\nu$ - 'hand'. The semantic situation here is complicated, but a - $\gamma\nu$ - 'hand' may plausibly be identified in:

1) the adv./prep. (§ 26.8.2) $\acute{\epsilon}\gamma\text{-}\gamma\nu$ 'in hand' > 'nearby'; cf. $\acute{\epsilon}\gamma\gamma\acute{\upsilon}\text{-}\varsigma$ 'near', $\acute{\epsilon}\gamma\gamma\acute{\upsilon}\text{-}\theta\iota$ 'nearby', $\acute{\epsilon}\gamma\gamma\acute{\upsilon}\text{-}\theta\epsilon\nu$ '(from) nearby'.

2) the substantivized prepositional governing compound (§ 26.9.1) $\acute{\epsilon}\gamma\text{-}\gamma\acute{\upsilon}\text{-}\eta$ '(placed) in the hand' > 'surety, pledge' (whence denominative $\acute{\epsilon}\gamma\gamma\upsilon\acute{\alpha}\omega$ 'hand over as a pledge' and further compounds of the types $\acute{\upsilon}\pi\text{-}\acute{\epsilon}\gamma\gamma\upsilon\omicron\varsigma$ 'under surety', $\acute{\epsilon}\chi\text{-}\acute{\epsilon}\gamma\gamma\upsilon\omicron\varsigma$ 'able to give security' etc.

3) a locational adjective $\acute{\epsilon}\gamma\text{-}\gamma\nu\text{-}\alpha\lambda\omicron\text{-}$ 'in the hand', the apparent source of the factitive denominative $\acute{\epsilon}\gamma\gamma\upsilon\alpha\lambda\acute{\iota}\zeta\omega$ 'put into the hand, give'.

4) the prepositional governing compound(s) $\acute{\upsilon}\pi\acute{o}\gamma\nu\omicron\varsigma$ / $\acute{\upsilon}\pi\acute{o}\gamma\nu\iota\omicron\varsigma$ 'immediate, actual, present, near' (< 'under one's hand'—so also *L. sub manu*).

³⁰ Cf. Frisk *GEW*, but also Chantraine *DELG sv.*

³¹ As already indicated (Part I, note 3), Hesychius' $\kappa\eta\acute{\alpha}\gamma\iota\omicron\nu$ 'σύντριμμα ... is faulty. If the emendation to σύντριμμα is accepted, and if a $\kappa\eta\acute{\alpha}\gamma\iota\omicron\nu$ is thus a 'skull fracture', it might be analyzed $\kappa\eta\acute{\alpha}\text{-}\phi\alpha\gamma\text{-}\iota\omicron\text{-}$ with a $\kappa\eta\acute{\alpha}\text{-}$ identical to the $\kappa\eta\eta\text{-}$ of $\kappa\eta\acute{\eta}\delta\epsilon\mu\nu\nu$. But the case is ambiguous (cf. I, note 3 for a second possibility altogether).

³² It means 'true' in later texts by a re-interpretation of A 106. Cf. Leumann *Hom W*, 33 f.

³³ *Glotta* 12, 18 ff.

For the root etymology, this γu - 'hand' may be compared with Av. *gauna*- 'hand'.³⁴ Both are presumably deverbative agent nouns from the root of a group of Baltic verbs meaning 'take, get, receive' (Lith. *gáunu*/*gáuti* etc.; cf. Av. *gūnaoiti* 'verschafft'?). The Greek root noun beside the Av. *o*-stem can be paralleled in the same semantic area by, e.g., κλώψ 'thief' beside κλοπός 'id.' within Greek itself. On this basis one could imagine a *goμ*(*H*)-/*gu*(*H*)- 'taker, receiver' and a *goμ*(*H*)ό- 'id.' specialized to words for 'hand' in Greek and Avestan respectively.

In that case, it would immediately become possible to assume a compound κρη-γυ-ο-. But instead of Schwyzler's 'having a head and hand(s)', it would seem semantically more direct to recall that Greek *κάρᾱ*/*κρᾱ*ῖα(τ)- has a secondary meaning 'accomplishment, result' etc. (cf. *κράινω* 'accomplish, realize, bring to pass' and *καρᾱ-δοκέω* 'await the outcome'). One could thus interpret *κρήγυος* as a possessive compound *κρᾱ-γυ-ο*- 'with result(s), fulfillment in hand', and therefore 'offerring results' etc., 'effective, helpful, useful'. [*]

24.1.3 The case of *κραιπάλη* also belongs here. As was discussed above (§§ 22.2 ff.) in connection with *καραι-βαράω* (Pherecr.) vs. *καρη-βαριάω* (Ar.), *-βαρέω* (Arist.) etc., there are a number of morphological (*Ἀλθῆ*- : *Ἀλθαι*-, *θηβᾱ*- : *Θηβαι*-) and semantic (*λήθ*- : *λαιθ*-) models available for the creation of *καραι*- beside *καρη*-, and this pair itself already suggests that it is in these phenomena that there might also be found an explanation of *κραι-πάλη* (Hp., Arist. etc.) 'dizziness brought on by drink; hangover'—cf. *κραιπαλάω* 'suffer from a hangover' (Ar. +). Galen says the condition is so named ἀπὸ τοῦ *κάρηνον πάλλεσθαι* ('because of the throbbing of the head'). This explanation is semantically unobjectionable. The morphology becomes perfectly clear as soon as *κραι*- is seen as a substitute for *κρᾱ*-/*καρη*-, parallel to *καραι*- beside *καρᾱ*-/*καρη*- etc. (as above). We could have here a simple case of a determinative compound consisting of *κρᾱ*- 'head' (as in *κρή-δεμνον*) plus *πάλη*, a verbal noun from *πάλλομαι* 'leap, jump' etc. (cf. Attic *ἀνα-πάλη* 'a kind of dance'). All that is missing is the alternate form **κρᾱ-πάλᾱ*. This must have existed in some Doric dialect(s), because it is clearly *κρᾱπάλᾱ* that was borrowed into Latin (whence *crāpula* with the normal Latin phonological developments).³⁵ A **κραιπάλᾱ* would not have given the Latin form (cf. *φαινόλης* : *paenula* etc.).³⁶

³⁴ See Kellens *Noms-racines*, 331 f., 369 f.

³⁵ A Gk. **κρᾱ-πάλᾱ* could also have yielded *crāpula* as the loan-form in Latin (cf. *κλᾱῖθρον*/Att. *κλειθρον* : Plaut. *fenestra clatrata*)—so Leu², 69. But this *κρᾱ*- is itself

The likelihood of other $\kappa\rho\tilde{\alpha}$ - compounds, however, has certain consequences. If $\kappa\rho\eta$ -/ $\kappa\rho\tilde{\alpha}$ - as a compound form of $\kappa\acute{\alpha}\rho\eta$ is not limited to $\kappa\rho\eta$ -δεμνον, it becomes very difficult to suppose, as has sometimes been done,³⁷ that $\kappa\rho\eta$ -δεμνον is dissimilated from $*\kappa\rho\eta\nu\sigma$ -δεμνον (cf. $\kappa\rho\tilde{\alpha}\nu$ -ίον etc.), since this explanation is inapplicable both to $\kappa\rho\eta\gamma\nu\sigma$ and to the $*\kappa\rho\tilde{\alpha}\pi\acute{\alpha}\lambda\tilde{\alpha}$ that seems to have existed beside $\kappa\rho\alpha\iota\pi\acute{\alpha}\lambda\eta$. Additional auxiliary hypotheses would be required. According to a suggestion of Frisk's,³⁸ $\kappa\rho\eta\delta\epsilon\mu\nu\sigma$ could come from $*\kappa\rho\eta\sigma$ -δεμνον with loss of σ before δ . To this it may be objected that the phonology is highly questionable.³⁹ So too is the assumption of a $*\kappa\rho\tilde{\alpha}\sigma$ -/ $\kappa\rho\eta\sigma$ - 'head' in Greek, and $\kappa\rho\acute{\alpha}\sigma$ -πεδον, offered by Frisk as a parallel, is insufficient as such (see below). Furthermore, a $*\kappa\rho\tilde{\alpha}\sigma$ - in $\kappa\rho\eta\gamma\nu\sigma$ and $*\kappa\rho\tilde{\alpha}\pi\acute{\alpha}\lambda\tilde{\alpha}$ is practically impossible.

24.2 Consequently, it seems sure that the first member of the compounds $\kappa\rho\eta\delta\epsilon\mu\nu\sigma$, $*\kappa\rho\tilde{\alpha}\pi\acute{\alpha}\lambda\tilde{\alpha}$ ($\kappa\rho\alpha\iota\pi\acute{\alpha}\lambda\eta$), $\kappa\rho\eta\gamma\nu\sigma$ and perhaps $\kappa\rho\acute{\alpha}\gamma\iota\sigma$ (I, note 3) is a $\kappa\rho\tilde{\alpha}$ -/ $\kappa\rho\eta$ -, but there is more than one theoretically possible analysis even so. For the simplex n-a $\kappa\acute{\alpha}\rho\eta$, it was argued (§ 20), among other things, that Myc. (*qo-u-*)*ka-ra* demonstrates that Greek had a stem $\hat{k}r\text{-}eh_2$ -/ $\hat{k}r\text{-}eh_2$ - 'head'. And short of assuming that $\kappa\acute{\alpha}\rho\eta$ has nothing to do with this stem, there was no alternative to concluding that nom.-acc. $\kappa\acute{\alpha}\rho\eta$ simply reflected $\hat{k}r\text{-}\tilde{e}h_2$ —especially since both an inherited nom.-acc. $*\hat{k}r\text{-}h_2sn$ and an innovated Greek nom.-acc. $*\kappa\acute{\alpha}\rho\alpha\chi\alpha$ seemed very dubious propositions. But there is no doubt that this word had an *oblique* stem $\hat{k}r\text{-}h_2sn$ - from very early on in Greek

unlikely. It is phonologically impossible if $\kappa\rho\alpha\iota\pi\acute{\alpha}\lambda\eta$ in Hp. is genuine Ionic, and is morphologically implausible ($\kappa\rho\tilde{\alpha}$ - < $*\hat{k}r\text{-}h_2s\text{-}i$?) in any case.

³⁶ Stolz (IF 17, 88) emphasizes this point, but offers a totally arbitrary solution—namely a “popular” treatment that applied to loanwords but not native ones. The assumption of Etruscan mediation to account for $\kappa\rho\alpha\iota\pi\acute{\alpha}\lambda\eta$: *crapula* is unnecessary (Meillet *Esq.*, 93; Ernout, *BSL* 30, 122; E-M *DELL*, sv).

If *crapula* points to a (possibly Doric) $*\kappa\rho\tilde{\alpha}\pi\acute{\alpha}\lambda\tilde{\alpha}$ beside Attic (and Ionic?) $\kappa\rho\alpha\iota\pi\acute{\alpha}\lambda\eta$, this would somewhat disfavor the idea (so now Peters *Untersuchungen*, 234) that $\kappa\rho\alpha\iota$ - reflects a very ancient locative $\hat{k}r\text{-}eh_2\text{-}i$ made to the h_2 -stem whose nominative lies behind $\kappa\acute{\alpha}\rho\alpha$. Even without potential evidence for a $*\kappa\rho\tilde{\alpha}\pi\acute{\alpha}\lambda\tilde{\alpha}$, one could decline to see such a loc. in $\kappa\rho\alpha\iota\pi\acute{\alpha}\lambda\eta$ on the grounds that oblique inflection of $\hat{k}r\text{-}(e)h_2$ - 'head' might well not have survived at all into the individual languages (cf. §§ 26.5, 51 ff.) except where an oblique case form might have been adverbialized already in the protolanguage and inherited as an adverb (§ 26.8.6).

³⁷ Ehrlich, *Zur idg. Sprachgeschichte*, 6 ff.

³⁸ GEW sv.

³⁹ Chantraine *DELG* sv.

(details below § 49), and the appearance of this oblique stem as the first member of a compound is, in principle, perfectly possible (cf., for that matter, consistent Vedic $\acute{s}ir\acute{s}a-$ < $\hat{k}r_h_2s\eta-$ as first compound member⁴⁰). It is therefore not possible at first glance to rule out the theoretical possibility that $\kappa\rho\acute{\eta}(\delta\epsilon\mu\nu\nu\omicron)$, $\kappa\rho\acute{\eta}(\gamma\nu\omicron\varsigma)$ and $*\kappa\rho\tilde{\alpha}(\pi\acute{\alpha}\lambda\alpha)$ result from $\hat{k}r_h_2s\eta-$ > $\kappa\rho\tilde{\alpha}h\alpha-$ (with a further Attic and Ionic development to $\kappa\rho\eta\alpha-$ > $\kappa\rho\epsilon\tilde{\alpha}$ > $\kappa\rho\eta-$). A genuinely native Attic compound with this first member might be conclusive (depending on one's view of Attic reversion⁴¹), but the only relevant forms are $\kappa\rho\acute{\eta}\delta\epsilon\mu\nu\nu\omicron$ and $\kappa\rho\acute{\eta}\gamma\nu\omicron\varsigma$ themselves. $\kappa\rho\acute{\eta}\delta\epsilon\mu\nu\nu\omicron$, although it occurs in Attic poetry (E. *Tr.* 508), is likely enough to be simply an epic word, and therefore without significance for these purposes. The occurrence of $\kappa\rho\tilde{\alpha}\delta\epsilon\mu\nu\nu\omicron$ in a tragic chorus (E. *Ph.* 1490) is, of course, even less meaningful. The situation of $\kappa\rho\acute{\eta}\gamma\nu\omicron\varsigma$ is similar. The occurrence of the word as $\kappa\rho\acute{\eta}\gamma\nu\omicron\nu\omicron$, with $-\eta-$, in Theocritus (20.19) indicates that it was very much a Homeric (or, at most, Ionic) item, and one will therefore hesitate to conclude from a single appearance of $\kappa\rho\acute{\eta}\gamma\nu\omicron\iota$ in Plato (*Alc.* 1.111e) that the word was Attic at all, much less Attic in this phonological shape.

24.3 The Homeric situation of $\kappa\rho\acute{\eta}\delta\epsilon\mu\nu\nu\omicron$, however, might make the assumption of $\hat{k}r_h_2s\eta-$ > $\kappa\rho\eta-$ at least rather dubious. There are eleven more or less independent occurrences of the word in the *Iliad*, *Odyssey* and hymns with $\kappa\rho\eta-$ always in thesis, but with no positive indication (either graphic or metrical) of an original disyllabic shape.

⁴⁰ W-D 2.1, 56 with the additional information that the nom.-acc. s -stem $\acute{s}ir\acute{s}a-$ appears as a first compound member in the earlier language only in dvandvas.

⁴¹ The view that one might label "traditional" (Brugmann *IF* 9, 154 note 2—cf. Peters *Untersuchungen* 298 ff. for further references and discussion) has it that the distinction between $\epsilon\mu\phi\epsilon\rho\eta$, $\delta\eta\rho$, $\epsilon\gamma\rho\eta\gamma\acute{o}\rho\eta$ and $\acute{\upsilon}\gamma\iota\tilde{\alpha}$, $\epsilon\tilde{\nu}\delta\epsilon\tilde{\alpha}$ (Brugman also includes $\epsilon\tilde{\upsilon}\phi\upsilon\tilde{\alpha}$) is to be explained by an early reversion of \tilde{a} to \tilde{a} after r followed by $e(h)a$ > \tilde{a} contraction followed by a second episode of reversion after i and e . In this view, a $\kappa\rho\tilde{\alpha}h\alpha-$ (> $\kappa\rho\eta\alpha-$ > $\kappa\rho\epsilon\tilde{\alpha}-$) would be expected to end up as Attic $\kappa\rho\eta-$ (unless one accepts a revised chronology of Att.-Ion. \tilde{a} > \tilde{a} and $a(h)a$ > \tilde{a} contraction—cf. note 6 above). On the other hand, some views that operate with only one episode of reversion (e.g. Gates, *Glotta* 54, 44 ff.; Miller, *Die Sprache* 22, 137 ff.) would aim, in essence, to explain Attic $r\tilde{a}$ < $re(h)a$ as analogical ($\delta\eta\rho$ after $\gamma\acute{\epsilon}\nu\eta$ etc.), but must also then explain the failure of analogy to apply to $i/e\tilde{a}$ < $i/lee\tilde{a}$ ($\acute{\upsilon}\gamma\iota\tilde{\alpha}$, $\epsilon\tilde{\nu}\delta\epsilon\tilde{\alpha}$ vs. $\epsilon\tilde{\upsilon}\gamma\epsilon\nu\tilde{\eta}$). Some such view may yet prove to be workable. (I agree with Peters *Untersuchungen* 299 f. in rejecting Gates' suggestion that $\acute{\upsilon}\gamma\iota\tilde{\alpha}$ was originally an \tilde{e} -stem and therefore a "special case", but the general approach taken by Gates is, in my opinion, still thinkable.) In any case, a single-reversion theory might lead one to expect Attic $\kappa\rho\tilde{\alpha}-$ from $\kappa\rho\tilde{\alpha}h\alpha-$, and this expectation might be confirmed by oblique $\kappa\rho\tilde{\alpha}r-$ in the tragedians (if genuine Attic—cf. note 6 once again).

This contrasts sharply with the case of $\hat{k}rh_2sn\text{-}$ in the denominative verb $\kappa\rho\tilde{\alpha}\alpha\acute{\iota}\nu\omega$ (< $\hat{k}rh_2sn\text{-}\acute{\iota}o/e\text{-}$ see below) 'achieve; rule over', where the great majority of the forms in the *Iliad* still presuppose a disyllabic $\kappa\rho\tilde{\alpha}\alpha\nu$ —directly or indirectly (e.g. $\acute{\epsilon}\pi\epsilon\kappa\rho\alpha(\acute{\iota})\alpha\iota\nu\epsilon$, $\acute{\alpha}\kappa\rho\tilde{\alpha}\alpha\nu\tau\omicron\nu$, $\kappa\rho\eta\eta\nu\alpha\iota$ etc.). Even in the *Odyssey*, the forms are still evenly divided between disyllabic and contracted shapes ($\kappa\rho\eta\eta\nu\alpha\iota$ etc. vs. $\kappa\rho\eta\eta\nu\alpha\tau'$ etc.). It must be remembered, of course, that $*\kappa\rho\tilde{\alpha}\tilde{\alpha}\delta\acute{\epsilon}\mu\nu\text{-}/*\kappa\rho\eta\tilde{\alpha}\delta\acute{\epsilon}\mu\nu\text{-}$ would be impossible to use in hexameters, and that $*\kappa\rho\tilde{\epsilon}\tilde{\alpha}\delta\acute{\epsilon}\mu\nu\text{-}$ would at least be difficult (though not impossible—cf. $\kappa\rho\tilde{\alpha}\tau\epsilon\upsilon\tau\acute{\alpha}\omega\nu$, $\theta\rho\tilde{\alpha}\sigma\epsilon\iota\acute{\alpha}\omega\nu$ etc.) without metrical lengthening.⁴² Consequently, the cases of $\kappa\rho\eta\delta\epsilon\mu\nu\omicron\nu$ vs. (predominant) $\kappa\rho\eta\eta\nu\alpha\iota$ etc. are not as completely parallel as one might wish. But the assumption that $\kappa\rho\eta\delta\epsilon\mu\nu\omicron\nu$ did not enter the epic dialect until after a contraction⁴³ of $\kappa\rho\tilde{\epsilon}\tilde{\alpha}\text{-}$ to $\kappa\rho\eta\text{-}$ is nevertheless an unattractive one, and $\hat{k}rh_2sn\text{-}$ > $\kappa\rho\eta\text{-}$ may probably be safely discounted—especially if nothing further is to be based on this decision.

24.4 The other possibility, of course, is to identify $\kappa\rho\eta\text{-}$ in its stem formation with the simplex nom.-acc. $\kappa\acute{\alpha}\rho\eta$ < $\hat{k}r\text{-}\acute{\epsilon}h_2$. This can again be done in two ways: $\kappa\rho\eta\text{-}$ could either reflect $\hat{k}r\text{-}eh_2\text{-}$ (with a stem identical to that of $\kappa\acute{\alpha}\rho\eta$, but showing the non-syllabic Lindeman's Law variant that would be theoretically regular in the polysyllabic compound), or $\hat{k}r\text{-}h_2\text{-}$,⁴⁴ the zero grade form of the nom.-acc. simplex (cf., e.g., Hom. $\delta\rho\nu\text{-}\tau\acute{o}\mu\omicron\varsigma$ 'woodcutter' and RV $dru\text{-}\acute{s}ád\text{-}$ 'sitting in a tree', $dru\text{-}padá\text{-}$ 'wooden post' vs. n-a simplex $d\acute{o}\rho\nu/dáru$ 'wood, tree'). Between these last two possibilities, both of which would suggest that $\kappa\rho\eta\text{-}$ is very archaic, there is no reasonable way to decide.

24.5.1 There are no other sure examples of Greek compounds showing a first member related to $\kappa\acute{\alpha}\rho\eta$ etc. and meaning 'head'. The two other cases that have sometimes been associated with $\kappa\rho\eta\text{-}$ ($\delta\epsilon\mu\text{-}\nu\omicron\nu$) are very unlikely to belong here. These are $\kappa\rho\eta\sigma\phi\acute{\upsilon}\gamma\epsilon\tau\omicron\nu$ '(place of) refuge' (Hdt., D. H., Luc.) and $\kappa\rho\acute{\alpha}\sigma\pi\epsilon\delta\omicron\nu$ 'border (of a garment or place), flank (of an army)' (Attic : Ar. +). The first of these has been analyzed $\kappa\rho\eta\sigma\text{-}\phi\acute{\upsilon}\gamma\epsilon\tau\omicron\nu$ with a first member reflecting $\hat{k}rh_2\text{-}s\text{-}$, in effect,

⁴² But cases of $-\epsilon\tilde{\iota}\tilde{\alpha}\text{-}/-\epsilon\tilde{\iota}\omega\text{-}$ metrically lengthened from $-\epsilon\tilde{\alpha}\text{-}/-\epsilon\omega\text{-}$ that in turn comes from $-\eta\tilde{\alpha}\text{-}/-\eta\tilde{\omega}\text{-}$ are, at the very least, exceedingly rare if exemplified at all.

⁴³ I must forgo at the moment a discussion of whether (or to what extent) the epic tradition could scan $-\epsilon\tilde{\alpha}\text{-}$ as a monosyllable by "synezesis" before that sequence had actually contracted in contemporaneous Ionic. For a survey of cases of Homeric "synezesis" cf. Chantraine *Gramm* 1, 69 ff.

⁴⁴ Naturally, $\kappa\acute{\alpha}\rho\eta$ itself cannot reflect $\hat{k}rh_2$.

and equivalent to the stem of Skt. *śīrah* and Av. *sarah-* (< $\hat{k}rh_2$ -os) 'head'.⁴⁵ The compound, in this interpretation, means 'a flight for the head' (?), whence 'a place to which one flees to save his head'. But the semantics are rather forced, and for this reason Wackernagel⁴⁶ proposed a * $\chi\rho\eta\epsilon\sigma$ -φύγετον, with a first member identical to $\chi\rho\eta\sigma$ 'debt' (Hom. $\chi\rho\epsilon\iota\sigma$, Ion., Att. $\chi\rho\epsilon\sigma$). For the form of the first member Wackernagel compares $\xi\pi\sigma$: $\epsilon\pi\epsilon\sigma$ -βόλος etc., and for the aspirate dissimilation across a compound boundary $\epsilon\kappa\epsilon\sigma\theta\acute{\epsilon}\nu\eta\varsigma$ (= $\epsilon\chi\epsilon$ -) etc.⁴⁷ The final step in the proposed development is the eventual contraction of $\kappa\rho\eta\epsilon\sigma$ -φ to $\kappa\rho\eta\sigma$ -φ. The original meaning would thus be 'flight from debt' and then 'refuge (in general)'. This analysis has no phonological or morphological drawbacks as long as the compound is taken as a relatively archaic one, formed at a time when the *s*-stem in question still had a long vowel in its first syllable. At a somewhat later stage both Ionic (with $\chi\rho\epsilon\sigma$ -Hom., Hdt.; pl. $\chi\rho\epsilon\alpha$ -Hes.) and Attic ($\chi\rho\epsilon\sigma$ -Plato; pl. $\chi\rho\epsilon\alpha$ -Ar.) have a shortened vowel there, and a model like $\xi\pi\sigma$: $\epsilon\pi\epsilon\sigma$ - would lead to $\chi\rho\epsilon\sigma$: $\chi\rho\epsilon\epsilon\sigma$ - (> $\chi\rho\epsilon\iota\sigma$ -) while $\xi\pi\epsilon\alpha$: $\epsilon\pi\epsilon\sigma$ - would produce a $\chi\rho\epsilon\alpha$: $\chi\rho\epsilon\sigma$ - (at least in Ionic).⁴⁸ As to the dialectal position of the compound, its pattern of attestation (Hdt., D.H., Luc.) makes it appear that this is an Ionic form that was resurrected (presumably from Herodotus) by a pair of authors of the imperial age⁴⁹.

24.5.2 Even though * $\chi\rho\eta\epsilon\sigma$ -φ. is a formally acceptable preform, however, one may object to the proposed semantics. If it originally meant an escape specifically from debt and then came to mean a refuge in general, it either ought to have this specific meaning or a general meaning. But it has neither. Herodotus uses the word four times (5.124, 8.51, 9.15, 9.96). It never means an escape from debt. But neither does it refer sometimes to a refuge from one thing, and on other occasions to a

⁴⁵ e.g. Kretschmer KZ 31, 410 followed by Solmsen RhM 53, 156.

⁴⁶ KZ 33, 56 f. (= Kl Schr 1, 735 f.).

⁴⁷ For the operation of Grassman's Law when the two aspirates do not belong to consecutive syllables cf., e.g., (h)αδελφός 'brother', (h)άµαθος 'sand', (h)έδαφος 'foundation' etc. (Schwyzer GG 1, 261).

⁴⁸ Such a case of aspirate dissimilation does not necessarily mean that the compound actually dates from the very onset (or first episode) of Grassman's Law (e.g. Schwyzer GG 1, 261 on $\epsilon\kappa\epsilon\chi\epsilon\iota\acute{\rho}\iota\alpha$ etc.).

⁴⁹ Lucian would have been particularly likely to have come across an Ionic $\kappa\rho\eta\sigma\phi\acute{\upsilon}\gamma\epsilon\tau\omicron\nu$ in a source like Herodotus if the Herodotean (or at least Ionic historical) parody Περὶ τῆς Συρίης θεοῦ was written by him.

refuge from something else. *κρησφύγετον* in Herodotus always refers very specifically to a pre-arranged position in which combatants may take refuge in order not to be killed by the enemy in war. This makes it somewhat difficult to see how the word could reflect **κρηεσ-φ.*, and it might not be out of place to consider an alternative.⁵⁰

24.5.3 The very specific meaning that *κρησφύγετον* always bears in Herodotus (where the trustworthy evidence begins and ends) suggests comparison with the frequent Homeric *κῆρα φυγεῖν* 'escape death (in battle)', an exact semantic match:

⁵⁰ More recently, S. G. Kapsomenos (*Glotta* 40, 43 ff.) has taken *κρησφύγετον* to be dissimilated from a **κρησ-φύγετον* which itself contains, as its first member, a lengthened grade variant of the preverb/preposition *πρός* and *πρός* (as in *πρέσ-βυς*, and tenuously attested as a free form in grammarians). This suggestion does not impose itself: neither is there any compelling evidence (especially in Ionic, to which the word is limited) for a **κρης*, nor is the dissimilation *π ... φ > κ ... φ* well established.

κρησ-φύγετον has also now been discussed by M. Peters (*Untersuchungen*, 232 ff.), who interprets *κρησ-* (as well as the *κρασ-* of *κράσ-πεδον* 'edge, seam') as a local adverb **krās* 'at the edge'. This **krās*, in turn, is taken by Peters to be the original g.-abl. of the formation that also lies behind *κάρα* 'head'. A *κρησ-φύγετον* would thus be a 'refuge on the edge' or 'refuge on the sidelines'. This requires, however, that *κάρα* could be used to refer not only to the top of something, but to any extreme point, whether the highest point or not. And it is Peters' view that *κάρα* can in fact denote this (233 n. 180). In support of this claim, he cites the Homeric phrase (ι 140, ν 102 = 346) ... *ἐπὶ κρατὸς λιμένος* ... 'at the head or far end of the bay', and I know of no other relatively early occurrence of *κάρα* that would even appear to have any meaning other than 'head' or 'top'. But it is demonstrable that *ἐπὶ κρατὸς λιμένος* actually means, quite literally, 'at the top (= outermost point) of the bay'. This usage is immediately clear and comprehensible as soon as it is recalled that to 'sail out' is to 'sail up' (*ἀναπλεῖν*) and to 'sail in' is to 'sail down' (*καταπλεῖν*). The 'top' (*κάρη*) is therefore that part of the bay that is closest to the open sea (i.e. its entrance). This is all made clear in any case by the context at ι 140 ff.:

αὐτὰρ ἐπὶ κρατὸς λιμένος ῥέει ἀγλαὸν ὕδωρ,
κρήνη ὑπὸ σπείους· περὶ δ' αἴγειροι πεφύασιν.
ἔνθα κατεπλέομεν ...

'At the top (= outermost point or entrance) of the bay there flows shining water in a spring from beneath a cave ...

At that spot we sailed down (= in; i.e. entered the bay) ...'

This Hom. phrase is therefore the exception that proves the rule that *κάρα* means only 'head' or 'highest point' (of a mountain or a bay). If so, it seems quite unlikely that the first member of *κρησ-φύγετον* has anything to do with *κάρα* etc.

As to Peters' reference to *κεφαλή* in the mg. 'extremity' (of a plot of land), LSJ gives two passages—one a papyrus from 3rd B.C., the other a papyrus from 3rd A.D.

... οὐδὲ βίη Ἡρακλῆος φύγε κῆρα (Σ 117)
 ... οὐδέ κεν αὐτὸς ὑπέκφυγε κῆρα ... (E 22)
 ... θάνατον καὶ κῆρα φύγωμεν (P 714)
 ἐκφυγέειν θάνατόν τε κακὸν καὶ κῆρα ... (Φ 66)
 καὶ νῦ κεν ἔκφυγε κῆρα ... (δ 502) etc.

Now κῆρ ‘death, destruction, doom’ cannot itself directly account for the first member of κρησ-φύγετον,⁵¹ but it does suggest a direction in which the solution may lie. κῆρ is referred by some⁵² to the root ($\acute{k}erh_2\text{--}$) of κεραῖζω (Hom. +) ‘slaughter, destroy’ (cf. RV *śṛṇāti* : AV *aśarīt* ‘smash’). There is some question about this,⁵³ and κῆρ might

⁵¹ Unless one were willing to adopt the view that κῆρ ultimately comes from a root noun ($\acute{k}ṛh_2\text{--}s/\acute{k}ṛh_2\text{--}és$ etc.) by a series of analogical developments (see note 53 just below), and that κρησ- goes back to the old gen.-abl. $\acute{k}ṛh_2\text{--}es$ apophonically reduced (to $\acute{k}ṛh_2\text{--}s\text{--}$) in composition. But such a hypothesis would be questionable in several respects—not the least of them that the assumption of such an old instance of an inflected gen.-abl. as the first member of a compound is a risky one.

⁵² Frisk *GEW* sv; Chantraine *DELG* svv κῆρ, ἀκήρατος is more hesitant.

⁵³ If κῆρ has the root ($\acute{k}erh_2\text{--}$) of κεραῖζω etc. The starting point for any further developments of the root noun in question would probably have been a paradigm which had already generalized zero root vocalism throughout. Roots ending in $-e\mu H$ and $-e_i H$ show generalized zero grade in their simplex root nouns consistently enough that it is attractive to assign this innovation to PIE: $\mu i H\text{--}$ ‘strength’ (L. *uis*; Gk. *ῥῖς*, *ῥῖφι*); $kruh_2\text{--}$ ‘gore, flesh’ (OIr. *crú*, Av. acc. *xrūm*, Slavic **kry*—OPol. *kry* e.g.); $bhrū H\text{--}$ ‘brow’ (Ved. *bhrū́*, Gk. (δ)φρῦς, OIr. acc. du *da brú*). In a few other cases, zero-grade simplex root noun paradigms to $-e_i H$ and $-e\mu H$ roots are highly probable for the Indo-Iranian stage (Ved. *śrī-*/Av. inst. *sraia* for **sriia* ‘beauty’—cf. Kellens *Noms-racines*, 378, Schindler *Wurzelnomen*, 47; Ved. *jū-* ‘charger, steed’/Av. nom. sg. *zūš* ‘swift (one)’—Kellens *Noms-racines*, 104 ff., Schindler *Wurzelnomen*, 18). Vedic root nouns like *bhí-* ‘fear’ and *dhí-* ‘thought’ conform as well, but their lack of exact outside correspondents makes it impossible to show directly that the generalization of zero vocalism was as early in these cases. It would be arbitrary, however, to suppose that it was significantly later than that of *jū-*, *śrī-*(?), or even *bhrū-*.

For roots in $-eRH$ and $-enH$, the evidence is scantier. But Av. *xā-* (nom. sg. *xā* Y. 10.4) ‘well-spring’ could reflect a root noun $kh_2nH\text{--}s$ (cf. Ved. *khan-* ‘dig’: *khātá-*, *khan-itár-*, *bisa-khá-* and see Kellens *Noms-racines*, 382 ff.). A corresponding Ved. *khā-s*, reinterpreted as an *ā*-stem, would have led to RV acc. *khām* ‘source’. Likewise, RV *jā-* ‘offspring’ potentially points to a root noun $ǵṛh_1\text{--}s$. RV *ǵṛ* ‘invocation’ beside Av. *gar-* (dat. sg. *gairē*, acc. pl. *garō*, inst. pl. *garōbīš*—Kellens *Noms-racines*, 24 f.) falls just short of guaranteeing a $ǵṛH\text{--}s/\ǵṛH\text{--}as$ for I-Ir (cf. *śrī-* beside Av. inst. **sriia* above). Still less can one be absolutely sure of an inherited $p/H\text{--}s$ reflected by Ved. *pūr* ‘city (wall)’. But it remains fair to say that root nouns made from roots of the shapes $-e_i H$, $-e\mu H$, $-eRH$, and $-enH$ show root zero grade throughout their paradigms in the various branches when there is any evidence at all. Positive indications of full grades even in the strong cases of such root nouns appear to be entirely lacking. The least objectionable assump-

instead have the root (*ker-*) of $\kappa\epsilon\acute{\iota}\rho\omega$.⁵⁴ But whether or not $\kappa\acute{\eta}\rho$ and $\kappa\epsilon\rho\acute{\alpha}\acute{\iota}\zeta\omega$ share the same root, it is clear that they have been in a close

tion for a putative root noun made to the root of $\kappa\epsilon\rho\acute{\alpha}\acute{\iota}\zeta\omega$ etc. would therefore be that its paradigm, already early on, was $\acute{k}r\acute{h}_2-s/\acute{k}r\acute{h}_2-és$. The question then becomes how this paradigm could have led to $\kappa\acute{\eta}\rho/\kappa\eta\rho\acute{o}s$.

But a prior question is whether Hom. $\kappa\acute{\eta}\rho$ represents $\acute{k}\acute{e}r$ or $\acute{k}\acute{a}r$ (> Ion. $\acute{k}\acute{a}r$). If it is $\acute{k}\acute{e}r$, then $\kappa\acute{\alpha}\rho\iota$ in Alcaeus (PLF 38.7) and $\kappa\acute{\alpha}\rho\alpha$ in Alcman (PMG 88) – cf. also $\kappa\acute{\alpha}\rho$ θάνατος (Hsch.) – would have to be hyper-Aeolic and -Doric respectively (and Att. $\kappa\acute{\alpha}\rho\epsilon\varsigma$ rejected in favor of the variant $\kappa\eta\rho\epsilon\varsigma$ – cf. Chantraine *DELG sv*), while $\kappa\acute{\eta}\rho$ in Pindar, tragic lyrics, and Attic prose (Pl. +) simply represent $\acute{k}\acute{e}r$ as such. In that case, one might suppose that $*\acute{k}r\acute{h}_2-s/\acute{k}r\acute{h}_2-és$ first became Gk. $*\acute{k}\acute{a}r\acute{a}s/\acute{k}\acute{e}r-ós$, and that this was analogically remodelled to $\acute{k}\acute{e}r/*\acute{k}\acute{e}r-ós$ before $\acute{k}\acute{e}r$ was generalized throughout to yield an eventual $\acute{k}\acute{e}r/\acute{k}\acute{e}r-ós$. The problem here is the rarity of securely assumable models that could have favored the creation of a new nominative $\acute{k}\acute{e}r$ beside oblique $*\acute{k}\acute{e}r$ ($\phi\eta\rho\acute{\epsilon}n/*\phi\eta\rho\eta\eta-ós$ – cf. $\phi\eta\rho\eta\eta-si$ > Pi $\phi\rho\alpha\sigma\acute{\iota}(v)??$). The relevant material for n -stems in Peters (*Untersuchungen* 170 ff., 177 ff. with references to Somsen *Glotta* 1, 76 ff.) points mainly to $-\acute{o}n/-\eta n$ - and only very rarely to $-\acute{e}n/-\eta n$ - (even if it is granted that e.g. $\sigma\tau\epsilon\phi\acute{o}n$ 'lofty; summit' beside $\sigma\tau\acute{\epsilon}\phi\alpha\nu\acute{o}s$ 'wreath' etc. really guarantees a one-time $-\acute{o}n/*-\acute{a}n$ - n -stem paradigm).

The alternative (taking Hom. $\kappa\acute{\eta}\rho$ as Ion. $\acute{k}\acute{a}r$ < $\acute{k}\acute{a}r$) is easier in only one respect. One could simply assume that $\acute{k}r\acute{h}_2-s/\acute{k}r\acute{h}_2-és$ etc. eventually yielded Att.-Ion. and Dor. $*\acute{k}\acute{a}r\acute{a}s/\acute{k}\acute{a}r-ós$ and that a new nominative $\acute{k}\acute{a}r$ (i.e. a new paradigm $\acute{k}\acute{a}r/*\acute{k}\acute{a}r-ós$) was modelled on the types $-\tau\eta\rho/-\tau\epsilon\rho\acute{o}s$, $-\tau\omega\rho/-\tau\omicron\rho\acute{o}s$, $-\eta\nu/-\epsilon\nu\acute{o}s$, $-\acute{o}n/-\acute{o}n\acute{o}s$ before the long vowel of the new nominative was generalized.

But there are several drawbacks to this explanation:

- 1) It requires that the \acute{V}_x/\acute{V}_x types exemplified by $\acute{\alpha}\sigma\tau\acute{\eta}\rho/\acute{\alpha}\sigma\tau\acute{\epsilon}\rho\acute{o}s$, $\epsilon\acute{\iota}\chi\acute{o}\nu/\epsilon\acute{\iota}\chi\acute{o}\nu\acute{o}s$ etc., which are themselves an innovation (contrast oblique $\acute{\alpha}\sigma\tau\acute{\epsilon}\rho$ - with $\acute{\alpha}\sigma\tau\rho\acute{\alpha}$), had already come into existence before the generalization of the long-vowel stem allomorph in root nouns ($\theta\acute{\eta}\rho/\theta\eta\rho\acute{o}s$ etc.). This is hard to judge.
- 2) An oblique $*\acute{k}\acute{a}r$ - ($ós$ etc.), the basis of the new nominative $\acute{k}\acute{a}r$, might not have arisen from older $\acute{k}r\acute{h}_2$ - ($és$ etc.) in all dialects. Aeolic could be expected to have had $\acute{k}\acute{o}r$ - ($ós$ etc.) instead, and consequently a new nominative $*\acute{k}\acute{a}\acute{o}$. Alcaeus' $\kappa\acute{\alpha}\rho\iota$ could not then be interpreted as genuine Aeolic.
- 3) The result would be that while $\kappa\acute{\alpha}\rho$ in Alcman could be the genuine Doric correspondent of Ionic epic $\kappa\acute{\eta}\rho$, Pindar's $\kappa\acute{\eta}\rho$ would have to be an epicism and $\kappa\acute{\alpha}\rho$ in Alcaeus could be neither genuine Aeolic nor epic. And $\kappa\acute{\eta}\rho$ in Attic prose and tragic lyric would either be genuine Attic or borrowed from epic. But it is not likely to be an epicism. Not only does it occur fairly freely in prose, but the meanings taken by $\kappa\acute{\eta}\rho$ in Attic prose and in tragedy seem to owe relatively little to Homeric usage. If Attic $\kappa\acute{\eta}\rho$ is a native word, however, and really reflects $\acute{k}\acute{a}r$ (< $\acute{k}\acute{a}r$), it is all the more surprising that it does not appear as $\kappa\acute{\alpha}\rho$ in tragic lyric.

All in all, it is perhaps not impossible that $\kappa\acute{\eta}\rho$ is from the root of $\kappa\epsilon\rho\acute{\alpha}\acute{\iota}\zeta\omega$ etc., but there is at the very least some serious question about it even from the morphological point of view.

⁵⁴ D.J.N. Lee, *Glotta* 39, 191 ff.; P. Ramat, *AGI* 50, 121 ff.; Schindler *Wurzelnomen*, 86. This etymology is probably best supported by semantic arguments. Morphologically,

synchronic association for a long time, as is shown by $\acute{\alpha}$ -κῆρατος 'unharmed' (Hom. +).⁵⁵ This form is best taken as a re-arrangement of expected $*\acute{\alpha}$ -κάρατος (to $\hat{k}erh_2$ -; cf. $\acute{\alpha}$ -θάνατος to $dh\acute{\alpha}neh_2$ - or $\acute{\alpha}$ -κάματος to $\hat{k}emh_2$ -; also RV $\acute{s}urtá$ - 'smashed' and Av. $a-sarata$ - 'unbroken' < $\hat{k}r_h_2$ -to-) that has been influenced by $\acute{\alpha}$ -κῆριος 'unharmed' (Hom. +),⁵⁶ which is apparently a negative possessive compound of κῆρ.⁵⁷ The relationship, then, between κεραίζω and $\acute{\alpha}$ -κῆρατος is parallel to δάμνημι : $\acute{\alpha}$ -δάματος, θνήσκω : $\acute{\alpha}$ -θάνατος, κάμνω : $\acute{\alpha}$ -κάματος and a few others. But the changed root vocalism suggests that κῆρ (especially by way of $\acute{\alpha}$ κῆριος) was associated with κεραίζω early on.⁵⁸

the question remains whether an original $\hat{k}ér/*k\acute{y}r-ós$ (with the root of κείρω and the disyllabic Lindeman's Law variant in the oblique) would have led to a genuine Aeolic $\kappa\acute{\alpha}r$ (Alc. $\kappa\acute{\alpha}r\iota$. Cf. note 53 just above).

⁵⁵ $\acute{\alpha}$ κῆρατος also means 'pure' already in Homer (Ω 303 with ὕδωρ- cf. $\acute{\alpha}$ κῆρατος said of wine at ι 205). It is not clear whether 'unharmed' has adopted this as a secondary meaning or whether 'pure' is a (rearrangement of a) derivative of the root seen in κεράννυμι etc. 'mix' (cf. Frisk *GEW* svv 1., 2. $\acute{\alpha}$ κῆρατος; Lee *Glotta* 39, 201).

⁵⁶ It seems less likely that $\acute{\alpha}$ κῆρατος 'unharmed' was somehow based on $\acute{\alpha}$ γήρατος 'ageless', since the latter is not found before Euripides and may be suspected of being a rearrangement of $\acute{\alpha}$ γήραος / $\acute{\alpha}$ γήρω.

Lee (*Glotta* 39, 201 ff.) refers $\acute{\alpha}$ κῆρατος directly to κῆρ by root etymology (after having argued convincingly that κῆρ itself belongs with κείρω etc.). But although κῆρ may very well belong with κείρω, there seems to be no plausible way of analyzing $\acute{\alpha}$ κῆρατος either as a primary derivative of $\hat{k}er$ - 'cut' or as a derivative of κῆρ (since κηραίνω, not found before Aeschylus, is clearly too late to serve the purpose). And Lee's semantic argumentation on pp. 201 ff., even if it succeeds in making 'undivided' > 'uneaten' a possibility for $\acute{\alpha}$ κῆρατος, does not in my opinion succeed in ruling out 'intact, unharmed' (cf. also Chantraine *DELG* sv κῆρ). We may therefore prefer to take $\acute{\alpha}$ κῆρατος 'unharmed' as belonging with κεραίζω etc.—whether or not we also include κῆρ itself.

⁵⁷ Sommer (*Nominalkomp.*, 115 with note 2) points out that privative bahuvrihis do not normally have a compositional -ιο-. This means that $\acute{\alpha}$ κῆριος is either simply abnormal or points to an unattested $*\kappa\acute{\eta}r\iota\omicron\varsigma$ or owes its existence to some special circumstance. Noting that $\acute{\alpha}$ κῆριος occurs in Homer, the Hymns, and Hesiod only before the bucolic diaeresis, and that a second $\acute{\alpha}$ κῆριος (: κῆρ 'heart') is also restricted to that position, Sommer (*Nominalkomp.*, 152) suggests that $\acute{\alpha}$ κῆριος (: κῆρ)—which is found already in *Il*—represents a remodelling of an $*\acute{\alpha}\kappa\eta\rho\omicron\varsigma$ intended for use before the bucolic diaeresis, and that $\acute{\alpha}$ κῆριος (: κῆρ)—first found in *Od*—really represents no more than a secondary referral of original $\acute{\alpha}$ κῆριος (: κῆρ) to κῆρ, whence a new meaning but the same positional characteristics for one and the same $\acute{\alpha}$ κῆριος. If we adopt this view of $\acute{\alpha}$ κῆριος 'unharmed', then the remodelling of an $*\acute{\alpha}\kappa\acute{\alpha}\rho\alpha\tau\omicron\varsigma$ to $\acute{\alpha}$ κῆρατος (: κεραίζω) would have been directly motivated by κῆρ itself.

⁵⁸ In short, κῆρ may have the root either of κεραίζω ($\hat{k}erh_2$ -) or of κείρω ($\hat{k}er$ -) in the first instance, but it was apparently to the group containing κεραίζω and $\acute{\alpha}$ κῆρατος

24.5.4 But ἀκήρατος is not the only form associated with κραίζω that has replaced a more primary one. The entire verb system (not extensive in any case) results from Greek innovation. Homer has only the present (indic.; infin.; ptcl.), the imperfect, and probably the future (κραῖζέμεν, universally accepted correction for the MSS. -ῖζέμεν at Π 830). There is also a deverbative κραίστης derived from this present at *H. Herm.* 336. An aorist ἐκραῖσα first appears in Herodotus. This small verb system receives no significant additions even in much later texts. Although it is clear from the outset that this is a recent set of forms, there remains the question of just how they were created. Schwyzler⁵⁹ classes κραίζω with denominatives of the type ἀγλαίζω 'make splendid' (: ἀγλάος), αὐλίζομαι 'lie in the courtyard, dwell' (: αὐλή), or καπνίζω 'make smoke' etc. (: καπνός). But this makes little sense in the absence of a noun or adjective *κεραος/κεραῶ from which to derive it. Frisk,⁶⁰ on the other hand, rejects a denominative derivation of the verb altogether and suggests that δαίζω 'cleave' is to δαίομαι 'divide, distribute' as κραίζω is (or was) to the primary formation from $\acute{k}erh_2$ - 'destroy' that it has replaced. This, of course, remains groundless without some evidence of what kind of primary formation that was. Only then could the parallelism between κραίζω and δαίζω be judged.⁶¹ In addition, the almost complete limitation of the forms of κραίζω to the present and imperfect does somewhat favor a denominative origin.

In fact, κραίζω may easily be a denominative, but not of the type ἀγλαίζω etc. Greek once had a neuter *s*-stem $\acute{k}erh_2-s$ 'destruction' from the root of κραίζω (*śṛṇāti* etc.). This is made clear by the privative adjective ἀκέραιος (Hdt. +) 'unharm'd' (= ἀκήρατος).⁶² This adjective, in turn, seems to be an example of a (mainly post-Homeric) type which simply has the privative α- prefixed to the positive adjective. The

(also ἀκηράσιος, ἀκέραιος) that it synchronically belonged (or came to belong) at some relatively early stage.

⁵⁹ Schwyzler *GG*, 735.

⁶⁰ *GEW*, *sv*.

⁶¹ Since Frisk specifically suggests that κραίζω has replaced a nasal infix present like the one continued by Ved. *śṛṇāti* 'smashes' and OIr. *ara-chrin* 'perishes', the pair δαίομαι : δαίζω would seem even less apt a parallel.

⁶² Just as ἀκήρατος can mean both 'unharm'd' and 'unmixed' (cf. note 55), ἀκέραιος eventually turns up with both meanings as well. But ἀκέραιος is 'unmixed, pure' relatively rarely and not before Euripides, while Herodotus and Thucydides use ἀκέραιος only to mean 'undamaged, intact'. There seems little choice here but to suppose that 'unmixed' is simply a secondary meaning.

older situation is represented in the contrast between positive δίκαιος and negative ἄδικος (: δίκη) or positive γηραιός and negative ἀγήραος (: γῆρας). But at a certain point the pattern δηλος : ἄδηλος, βέβαιος : ἀβέβαιος (Hp. +) begins to gain ground and it is probably to this stage that the creation of ἄ-κέραιος (Hdt., Thuc. +) belongs. This implies a *κέραιος 'destroyed' that is not itself attested.

24.5.5 In any case, there are two possible analyses of (ἄ)-κέραιος. Underlying this adjectival derivative must be either an \bar{a} -stem (δίκη : δίκαιος) or an -ας stem (γῆρας : γηραιός). Of these two possibilities, the -ας stem is the better choice because it can account for both ἄ-κέραιος and κεραίζω. A *κέρας 'destruction' (< $\hat{k}erh_2-s$) as the basis of a denominative κεραίζω 'destroy' would be exactly parallel to κτέρεα (: *κτέρος⁶³) 'funerary honors' (Hom. +) beside κτερεῖζω 'bury with full honors' (Hom.).⁶⁴ It would seem, then, that Greek inherited a neuter s -stem verbal noun beside whatever primary verbal formation it originally had from $\hat{k}erh_2$ - 'destroy'. The primary verb, however, was replaced by a denominative (κεραίζω) derived from this s -stem. Eventually, the s -stem (*κέρας) was also eliminated (possibly because of its homonymy with κέρας 'horn'), and to the extent that κεραίζω retained a verbal noun of its own at all, this, as we have seen, was κήρ.

If, as was noted above, the situation in which one finds mention of a κρησ-φύγετον is precisely the same as that of Homeric κῆρα φυγεῖν, and if in addition κήρ acts at least partly as the verbal noun to κεραίζω, and has replaced a *κέρας < $\hat{k}erh_2-s$ 'destruction' in that function, it would seem reasonable to suppose that the first member of κρησ-φύγετον could reflect $\hat{k}r_h_2-s$ - > κρᾱσ- > Ionic κρησ-. For the complete apophonic reduction of an s -stem as first compound member, one might compare ὀσ-(φραίνομαι) 'smell' < $od-s$ - (cf. L. odor), or Homeric ἑωσ-(φόρος) 'dawnbearing' which is trisyllabic (— ∪ ∪) and prob-

⁶³ The only singular that corresponds to Hom. κτέρεα 'funerary gifts/honors' is κτέρας (Hom., A.R.) 'gift, possession', which for its part never appears in the plural. It seems possible that an original singular *κτέρος 'gift, possession' adopted -ας inflection by assimilation to the nearly synonymous γέρας 'possession given as a token of honor'.

⁶⁴ The apparently old pattern neut. in -ος : denominative -εῖζω was later redone to -ος : -ίζω on the model of σ -stems and their -ίζω denominatives (ξένος : ξενίζω etc.). This newer type of -ίζω denominative from neuter s -stems is found already in Homer (τεῖχος : ἐτειχίσσαντο H 449), and *κτέρος/κτέρεα itself has κτερίσειε/κτερίσαιεν (: κτερίζω) beside κτερεῖζε/κτερεῖζει (: κτερείζω) in the epics. Cf. Chantraine *Gramm* 1, 339; Schwyzler *GG* 1, 135 f.

ably represents an $*\alpha\upsilon\sigma-$ < h_2us-s -⁶⁵ (cf. Skt. oblique $us-$ to $usas$ - 'dawn'), or AV $\acute{s}ir\acute{s}$ -*akti*- (but cf. § 52.4).

24.6 In the case of Attic $\kappa\rho\acute{\alpha}\sigma$ - $\pi\epsilon\delta\omicron\nu$ 'border (of a garment or region), flank (of an army)', it has become usual⁶⁶ to take the first member as a reflex of $\hat{k}rh_2-s$ - 'head' (cf. once again RV $\acute{s}irah$ etc.). But it is not clear why this should be so. There is no indication in the way the term is used that it refers specifically to the upper edge of something, and '(upper) edge' would in any case be altogether meaningless in some of the topographical uses. In the sense 'flank (of an army)', there is likewise no suggestion of 'vanguard' or 'front'. In fact, the opposite seems to be the case in the derivative $\kappa\rho\alpha\sigma\pi\epsilon\delta\acute{\iota}\tau\eta\varsigma$ (Plu.), which refers to a member of a chorus who brings up the rear and is specifically contrasted with the $\chi\omicron\rho\upsilon\varphi\alpha\acute{\iota}\omicron\varsigma$ 'chorus leader'. But while it is fair to say that $\hat{k}rh_2-s$ - 'head' is entirely inappropriate here, no alternative imposes itself either.⁶⁷ The etymology of $\kappa\rho\acute{\alpha}\sigma$ -($\pi\epsilon\delta\omicron\nu$) is best considered unknown.

25.1 A study of Greek first compound members related to $\kappa\acute{\alpha}\rho\eta$ 'head' (§§ 22–24) thus results in a recognition of two types. Either the simplex itself appears ($\kappa\alpha\rho\eta\beta\alpha\rho\acute{\iota}\alpha$ etc.) or else we find a $\kappa\rho\eta$ -/ $\kappa\rho\acute{\alpha}$ -. This could reflect either $\hat{k}r-eh_2$ - or $\hat{k}r-h_2$ - beside simplex $\hat{k}r-\acute{e}h_2$, but is not likely to reflect anything else (§ 24.3–.4). If $\hat{k}r-h_2$ - is assumed, this would furnish an alternation $\hat{k}r-eh_2$ -/ $\hat{k}r-h_2$ -. This is unsure, of course, for the first compound members, but $-\hat{k}r-h_2$ - is probably to be recognized as a second compound member in Greek.

⁶⁵ Schwyzler GG 1, 440 with notes 7 and 8 and references. On h_2us-s- > Gk. $\alpha\upsilon\sigma$ - Peters *Untersuchungen*, 12 ff., 72 f.

⁶⁶ Schmidt *Neutra*, 365; Risch, *IF* 59, 14; Frisk *GEW* and Chantraine *DELG* sv $\kappa\rho\acute{\alpha}\sigma$ - $\pi\epsilon\delta\omicron\nu$. Peters *Untersuchungen*, 232 f. makes a slightly different suggestion in seeing here a $*kr\acute{a}s$ that ultimately represents the adverbialized gen.-abl. of a $*\hat{k}erh_2$ / $\hat{k}reh_2$ - 'head' (cf. §§ 9.6 f.). The semantics remain unappealing (cf. the question of $\kappa\rho\eta\varphi\omicron\upsilon$ - $\gamma\epsilon\tau\omicron\nu$, note 50).

⁶⁷ For an Attic $\kappa\rho\alpha\sigma$ - that conveys 'edge, seam, border' one might think of a $*kr-s$ - (root of $\kappa\epsilon\acute{\iota}\rho\omega$ 'cut' etc.) that belongs with $\acute{\alpha}$ - $\kappa\alpha\rho\acute{\eta}\varsigma$ '*uncut(table) > short, small' (Hsch. $\acute{\alpha}\kappa\alpha\rho\acute{\eta}\varsigma$... τὸ βραχὺ ὃ οὐδὲ $\kappa\epsilon\acute{\iota}\rho\alpha\iota$ οἶόν τε). This would be consistent with an s -stem $*ker-es$ - 'a cut, a cutting', which might reasonably come to mean 'seam, edge'. Alternatively, a root etymology might be provided by $\kappa\alpha\acute{\iota}\rho\omicron\varsigma$ 'fringe of warp threads by which cloth is tied to the loom during weaving'. This term is especially reminiscent of $\kappa\rho\acute{\alpha}\sigma$ - $\pi\epsilon\delta\omicron\nu$ in the meaning 'seam, border of a garment', but appears to be made on a root $\hat{k}er$ - (thus $\hat{k}r-\acute{\iota}\omicron$ -) in view of Arm. *sari*-(k) 'string' (Pokorny *IEW* 577, Frisk *GEW* sv $\kappa\alpha\acute{\iota}\rho\omicron\varsigma$).

25.2 The Hesychius gloss ἵγκρος ἑγκέφαλος ('brain'; the form is also discussed by Herodian) is generally analyzed *en- $\hat{k}r$ -o*-⁶⁸ with a second member referred to *κάρη* etc.⁶⁹ But as we have seen, this word for 'head' in Greek (and elsewhere—see below) was an *-eh₂*-stem, so that a more precise reconstruction would be *en- $\hat{k}r$ -(h₂)-o*- with a phonological loss of the laryngeal in this position⁷⁰ and an original meaning '(residing/belonging) in the head'. The basic argument for *- $\hat{k}r$ -(h₂)-o*- rather than *- $\hat{k}r$ -o*- is that a $\hat{k}(e)r$ 'head' cannot even account for both *- $\hat{k}r$ -o*- and *κάρᾱ* within Greek (not to speak of the comparative evidence), while a $\hat{k}r-(e)h_2$ is possible for all the forms. In other words, a $\hat{k}(e)r$ is sometimes possible, but never necessary, and is possible only in ambiguous cases.

Cited, at any rate, as parallels for this phonological development are *νεο-γν-ός* 'new-born' (*Hom. hymns* +) and Latin *priui-gn-us* 'step-child' from *-gn(H)-o*-, and the rule may have first operated already in PIE to judge from this Greek-Latin correspondence and similar phenomena in Indo-Iranian⁷¹ (e.g. RV *tuvi-gr-a*- 'swallowing mightily' < *tuH-i-g[#]r(h₃)-o*-). The compound *en- $\hat{k}r$ (h₂)-o*- would be a governing compound of the usual inherited type with a structure comparable to that of ὕπ-αιθρ-ος 'out in the open' (: αἰθήρ), RV *ánu-path-a*- < *-p^{nt}-h₂-o*- '(going) along the path' (: *pánthāh* < *pent-oh₂-s*) etc., and it is therefore not implausible to suppose that it has received an archaic type of phonological treatment that has somewhat obscured the synchronic relationships between simplex *κάρη/κάρᾱ* and first member *κρη-/κρᾱ*- on the one hand and second member *-κρ-ος* on the other.

25.3 It is in any case this lack of synchronic relatedness that probably led to the reformation of the compound. It also appears as ἑγκαρ-ος (*AP-Alc.*, *Lyc.*) with the *-καρ-* vocalism of the simplex, a seemingly fresh formation altogether and perhaps simply made on the formal model κεφαλή 'head' : ἑγκέφαλος 'brain' = *κάρη* : ἑγ-καρος.⁷² But a third form of this compound meaning 'brain' is ἄκαρος (*EM* 45.13), which is said to show an $\acute{\alpha}$ - < *n*- that represents a zero grade allo-

⁶⁸ $\acute{\epsilon}γκ$ - > $\iotaγκ$ - cf. Schwyzer *GG*, 275.

⁶⁹ Frisk *GEW* and Chantraine *DELG sv*, Forssman, *Glotta* 45, 4.

⁷⁰ Kurylowicz *Apophonie*, 172; Beekes *Development*, 242 ff.; Schindler, *Die Sprache* 15, 166.

⁷¹ *W-D* 1, 93 ff.

⁷² So Frisk *GEW* 1, 438; Chantraine *DELG*, 310. In any case, for the semantic development '(found etc.) in the head' to 'brain' cf. OIr. *inchinn* 'brain' (: *cenn* 'head').

morph of $\acute{\epsilon}\nu$,⁷³ and thus an $\eta\text{-}\hat{k}r\text{-}h_2\text{-}o\text{-}$. This by-form, of course, cannot be explained as a relatively late innovation nearly as easily as was possible for $\xi\gamma\text{-}\kappa\alpha\rho\varsigma$. The $\acute{\alpha}\text{-}$ < $\eta\text{-}$, as rare and isolated as it is, would have to be considered an archaism. One could either suppose that the laryngeal loss assumed for $\acute{\iota}\gamma\text{-}\kappa\rho\varsigma$ was an optional rule and that $\eta\text{-}\hat{k}r\text{-}h_2\text{-}o\text{-}$ simply did not undergo it, or that the laryngeal was analogically restored at a somewhat later date but before $-\gamma HV\text{-}$ developed to Greek $-\alpha\rho V\text{-}$, or that $*\acute{\alpha}\kappa\rho\varsigma$ < $\eta\text{-}\hat{k}r\text{-}(h_2)\text{-}o\text{-}$ with laryngeal loss was remodelled in a somewhat amorphous way under the influence of the simplex $\acute{\alpha}\rho\alpha$ in some dialect(s). This is all quite unsure, however, and even the status of a zero grade $\eta\text{-}$ beside normal $en\text{-}(i, \text{etc.})$ is not at all secure.

25.4 The reality of a second compound member $-\hat{k}r\text{-}h_2\text{-}(o\text{-})$ in these words for 'brain' thus stands or falls with the strength of the case that can be made for $\acute{\iota}\gamma\kappa\rho\varsigma$. And although it is a perfectly plausible one, there is a slightly disturbing factor to be dealt with—the words $\varphi\alpha\lambda\alpha\kappa\rho\varsigma$ (Hdt., Anacr., Ar. +) 'bald' and $\lambda\epsilon\upsilon\kappa\rho\varsigma$, which also means 'bald' in the dialect of Salamis, according to Herodian.⁷⁴

Now $\varphi\alpha\lambda\alpha\kappa\rho\varsigma$ is one of a number of adjectival formations in $-\kappa\rho\varsigma$ that have a "familiar" tone,⁷⁵ and to $\varphi\alpha\lambda\acute{o}\varsigma$ $\lambda\epsilon\upsilon\kappa\acute{o}\varsigma$ (Hsch.) beside $\varphi\alpha\lambda\alpha\kappa\rho\varsigma$ one may formally compare $\delta\epsilon\iota\lambda\acute{o}\varsigma$ 'wretched' beside $\delta\epsilon\iota\lambda\alpha\kappa\rho\varsigma$ 'pitiable' (Ar.). The origins of this $-\kappa\rho\text{-}$ formation are clear at least in outline,⁷⁶ and to $\varphi\alpha\lambda o\text{-}$: $\varphi\alpha\lambda\alpha\text{-}\kappa\rho o\text{-}$ one may compare on the one hand $\nu\epsilon o\text{-}$: $\nu\epsilon\alpha\text{-}\kappa\text{-}$ ($\nu\acute{\epsilon}\alpha\xi$), and $\nu\epsilon o\text{-}$: $\nu\epsilon\alpha\text{-}\rho o\text{-}$ ($\nu\epsilon\alpha\rho\acute{o}\varsigma$) on the other. But whatever the details of its formation in the first instance, it is difficult to rule out completely the possibility that $\varphi\alpha\lambda\alpha\text{-}\kappa\rho\acute{o}\varsigma$ (when opposed at some point in some dialect to terms like $\varphi\alpha\lambda\alpha\nu\tau\acute{\iota}\alpha\varsigma$ 'bald man' etc.) was re-interpreted as having a $-\kappa\rho o\text{-}$ that had something to do with $\acute{\alpha}\rho\alpha/\kappa\rho\acute{\alpha}\tau\text{-}$, and that the word was semantically re-analyzed as 'bald-head(ed)'. The creation of an $*\xi\gamma\text{-}\kappa\rho\varsigma$ (using this apparent "compositional" $-\kappa\rho o\text{-}$) beside $\xi\gamma\text{-}\acute{\kappa}\epsilon\varphi\alpha\lambda o\varsigma$ might not be totally out of the question under these circumstances, and it is almost certainly the $-\kappa\rho o\text{-}$ of $\varphi\alpha\lambda\alpha\kappa\rho\varsigma$ in any case that led to the $\lambda\epsilon\upsilon\kappa\rho\varsigma$ reported by Herodian.

⁷³ Schulze, KZ 29, 263 f. with reference to Schmidt KZ 27, 307. Cf. Seiler KZ 75, 3.

⁷⁴ Herodian 1, 203.25 (ed. Lentz).

⁷⁵ Chantraine *Formation*, 225 with note 1, who sees $\varphi\alpha\lambda\alpha\kappa\rho\varsigma$ as influenced by $\acute{\alpha}\kappa\rho\varsigma$ –and supposes this even for $\delta\epsilon\iota\lambda\alpha\kappa\rho\varsigma$ ("composé populaire").

⁷⁶ Frisk *Nominalbildung*, 62 ff. Frisk follows Chantraine in seeing such derivatives as $\varphi\alpha\lambda\alpha\kappa\rho\varsigma$ and $\delta\epsilon\iota\lambda\alpha\kappa\rho\varsigma$ as "popular", but advocates an entirely different analysis.

25.5 Although this is a possibility, it must be considered a remote one, for such a re-analysis of the $-κρος$ of $φαλακρός$ would at least be hindered by other $-κρος$ formations that do not suggest 'head' at all: $δείλακρος$ has already been mentioned, and to this may be added $θαλυκρός$ (Call., *AP*) 'hot' and $άλυκρός$ (Nic., *EM*) 'warm', $ψαυκρός$ (Hsch.), $σαυκρός$ (Hsch.) etc. Furthermore, one may seriously question a re-interpretation that results in a unique pairing like simplex $κάρᾱ$: second member $-κρο-ς$; and to invoke first member $κῶᾱ-/κῶη-$ ($κῶη-δεμνον$ as above) and set $κῶη-$: $-κρο-ς$ parallel to $κεφαλῆ$: $-κεφαλος$ is too far-fetched to consider seriously.

All things considered, then, it seems best to retain the interpretation $en-\hat{k}r-(h_2)-o-$ for $ἵγκρος$. This furnishes a $-\hat{k}r-h_2-$ for Greek which is clearly the completely reduced form of the same stem that appears as the nom.-acc. of the simplex $κάρᾱ$ ($< \hat{k}r-\tilde{e}h_2$). It is important to note, however, that the existence of a $-\hat{k}r-h_2-$ in composition does not require the reconstruction of a simplex paradigm for this Greek word that includes both $\hat{k}r-eh_2-$ and $\hat{k}r-h_2-$. The allomorph showing complete apophonic reduction need not have appeared in that shape in the simplex paradigm before being used in compound, since an early enough compounding may itself have conditioned it. This is a point to which we will return below.

26.1 Other Greek forms that have sometimes been mentioned as potentially relevant to the question of the analysis of $κάρᾱ$ include $κατὰ$ (ἀπὸ) $κῶηθεν$ (Hom., Hes.) 'from the head down (?)' and $ἐπὶ$ $κάρ$ (Hom.) 'headlong' (whence $ἀνὰ$ $κάρ$ 'upwards' in Hp.). The first of these, however, has been eliminated from the group in question:⁷⁷ it is unlikely that a $κῶη-θεν$ 'from the head' would have been formed directly to the $κῶη-$ that appears in Homer only in $κῶη-δεμνον$, and from the simplex one could expect only $κῶᾱτ-ό-θεν$ (or $κῶᾱτ-ό-θεν$ or $καρηατ-ό-θεν$ or even $καρητ-ό-θεν$ to judge by $πατρ-ό-θεν$, $Δι(φ)-ό-θεν$ etc.). In addition, it would seem peculiar that this $κῶη-θεν$ would appear only after $κατὰ$ (with the exception of a single instance of $ἀπὸ$ $κῶηθεν$ in Hes. Sc.). These factors point to the view generally accepted that $κατακῶηθεν$ was made on $κατακῶης$ (= $ἀγορῶηθεν$: $ἀγορῶης$). And even though $κατακῶης$, for its part, could in theory reflect an old adverbial compound $κατα-κῶη-ς$ ($< -\hat{k}r-h_2-s$) with a structure identical to that of $ἀντι-κρός$,⁷⁸ it is regularly used of the destruc-

⁷⁷ Lejeune *Adv.* -ΘΕΝ, 58, 81 ff.; Leumann *Hom W*, 56 ff.

⁷⁸ Lejeune *Adv.* -ΘΕΝ, 58, 83.

tion of a city (Troy in particular) both in Homer and afterwards (Hdt., Attic), and is therefore better not separated from expressions like ἐν πόλει ἄκρῃ (Z 88, 297, 317, H 345), ἐξ ἄκρης πόλιος (Z 257) etc. Consequently, it is probably κατ' ἄκρης that is the basis of κατακρηθεν, and this in turn then represents κατ' ἄκρηθεν 'from top (to bottom)' in the first instance. This, however, was reinterpreted as 'from head (to foot)' and referred to κάρη at a relatively early date, as is made clear by Hes. *Th.* 574–5 and *H. Dem.* 181–3. The result was the creation of the alternate ἀπὸ κρηθεν (Hes. *Sc.* 7–8).

26.2 The question of ἐπὶ κάρ is more complicated. This expression occurs only once. It is found in a passage at Π 390–2:

(χαράδραι) ἐς δ' ἄλλα πορφυρέην μεγάλα στενάχουσι ῥέουσαι
ἐξ ὀρέων ἐπὶ κάρ·

'(The torrents) roar loudly as they stream into the purple
sea ἐπὶ κάρ from the mountains.'

The traditional view of ἐπὶ κάρ, held since antiquity,⁷⁹ makes it an adverbial prepositional phrase composed of ἐπί and a nom.-acc. for 'head' that has the form κάρ, a by-form of κάρη. There is, however, no generally accepted explanation of the exact relationship between these two different nominative-accusatives. Semantically, the implicit assumption is that the prepositional phrase ἐπὶ κάρ 'on(to) the head' has simply become an adverb with a meaning something like 'headlong'.

26.3 This entire interpretation has been challenged in a discussion by B. Forssman,⁸⁰ who argues on morphological and semantic grounds against any connection whatsoever between κάρ and κάρᾱ. Forssman then goes on to suggest that ... ῥέουσαι / ... ἐπὶ κάρ· is in fact a rearrangement of underlying ἐπι-καρ- (= -κατ-) ῥέουσαι, merely an example of preverb postponement, and discusses several problematical aspects of this proposal. Finally, ἀνάκαρ 'upwards', quoted from Hippocrates by Galen,⁸¹ is explained as an *Oppositionsbildung* to ἐπίκαρ, which had itself been re-interpreted at Π 392 as meaning 'downwards'. Whatever one's view of ἐπίκαρ, there is no doubt that Hippocrates' ἀνάκαρ was specially coined as its antonym. This is made clear by the very form of Galen's gloss, quoted by Forssman,⁸¹ and requires no further discussion. As to the merits of Forssman's ingenious suggestion

⁷⁹ See Forssman, *Glotta* 45, 1 note 2 for references.

⁸⁰ *Glotta* 45, 1 ff.

⁸¹ *Glotta* 45, 12 for references.

itself, we may forgo a detailed evaluation here⁸² because such a radical solution is not really necessary.

26.4 The need for an analysis totally different from the traditional 'headlong', which identifies $\kappa\acute{\alpha}\rho$ with $\kappa\acute{\alpha}\rho\bar{\alpha}$ in some unspecified way, is founded by Forssman on morphological and semantic objections to such an identification. But if these objections can be met, the need for a new interpretation of $\acute{\epsilon}\pi\iota\kappa\alpha\rho$ disappears.

As to the morphology, Forssman argues specifically and conclusively against a nom.-acc. $\kappa\acute{\alpha}\rho$ (a by-form of $\kappa\acute{\alpha}\rho\bar{\alpha}$) as the object of $\acute{\epsilon}\pi\iota$: this word for 'head' has an n-stem oblique in Greek that is itself inherited from PIE in Forssman's view. Not only is $\kappa\rho\bar{\alpha}(h)\alpha\tau$ - the expected correspondent of Skt. $\acute{s}ir\bar{s}n$ - (cf. $\omicron\upsilon\theta\alpha\tau$: $\bar{u}dh-n$ - 'udder' etc.), but the n-stem unenlarged by $-t$ - is also reflected in Greek (by $\kappa\acute{\alpha}\rho\eta\nu$ -a etc.). The nom.-acc. $\kappa\acute{\alpha}\rho\bar{\alpha}$, however, does not share this $-n$ -/ η - t -stem⁸³ with the oblique forms, and the Greek heteroclitic paradigm, in which the oblique corresponds to the Skt. oblique, makes an archaic impression. But in that case, Forssman continues, there is no way of explaining a nom.-acc. $\kappa\acute{\alpha}\rho$. Neither is there any probability that a $\kappa\acute{\alpha}\rho$ has been replaced by a new $\kappa\acute{\alpha}\rho\bar{\alpha}$ (for which there would have been no model) as nom.-acc., nor can a $\kappa\acute{\alpha}\rho$ have been extracted from oblique forms like $*\kappa\alpha\rho$ -ός, $*\kappa\alpha\rho$ -ί since these would seem never to have existed in Greek. Finally, Forssman rules out a still older and shorter $\hat{k}r$ -/ $\hat{k}r$ -/ $\hat{k}r$ -.⁸⁴

Semantically, the objection to the traditional view of $\acute{\epsilon}\pi\iota\kappa\alpha\rho$ reduces to a rejection of the assumption that an original prepositional phrase meaning 'on(to) the head' could have become a frozen adverbial expression meaning 'headlong' and then, more generally, 'helter-skelter'. This objection cannot be given much weight, however, since there are precise parallels for just such a development (cf. § 26.8).

⁸² A critique of Forssman's solution has recently been presented by Neu *Lok*, 20 ff. But cf. § 26.6.2 and Appendix I.

⁸³ Cf. § 18 above with note 2.

⁸⁴ Forssman's discussion becomes a little hard to follow at this point. He accepts what he writes as $\hat{k}r$ - r - a_2 in note 5, and reconstructs $\hat{k}r\bar{a}_2os$ for $\acute{s}ir\bar{s}$ and Arm. *sar* in note 4. I therefore assume that it is $\hat{k}r$ -/ $\hat{k}r$ -/ $\hat{k}r$ - that is being rejected when Forssman dismisses what he writes as $\hat{k}r$ -/ $\hat{k}r$ - in the text, but as $\hat{k}r$ - ($\hat{k}r\bar{a}$ -) in note 4. If Forssman means to accept $\hat{k}(e)r(e)h_2$ - and reject $\hat{k}(e)r$ -, I am in complete agreement. It is only necessary to add that $\iota\gamma\kappa\rho\sigma$ does not necessarily presuppose a $\hat{k}(e)r$ - (§ 25.2), and that $\kappa\rho\eta\delta\epsilon\mu\nu\nu$ need not be interpreted with Frisk (§ 24.1 with notes 38 and 39) as reflecting $*\kappa\rho\eta\sigma$ - $\delta\epsilon\mu\nu\nu$ by anyone who accepts a $\hat{k}(e)r(e)h_2$ -, as Forssman seems to do.

26.5 The morphological point (§ 26.4), however, is convincing. To be sure, one could argue that not even the exact correspondence of oblique $\kappa\rho\tilde{\alpha}\alpha\tau\text{-}$ to Ved. oblique $\acute{s}ir\tilde{s}n\text{-}$ conclusively demonstrates an inherited oblique $\hat{k}r\tilde{h}_2sn\text{-}$ and an idiosyncratic PIE heteroclite. Even though, the argument would run, e.g. Ved. *asthn-* 'bone' and Irish *asn(ae)* 'rib' seem to indicate jointly a $h_2est\text{-}n\text{-}$, this need hardly be considered inherited in view of the retention of t -stem $h_2o/est\text{-}$ in Indo-Iranian itself (Avestan gen. sg. *astō* etc. cf. §§ 7.1, 54.2). In much the same way, $\kappa\rho\tilde{\alpha}\alpha\tau\text{-}$ and $\acute{s}ir\tilde{s}n\text{-}$ could be considered parallel innovations. That is, one could say that $\kappa\rho\tilde{\alpha}\alpha\tau\text{-}$ has the same kind of status as $\omicron\upsilon\alpha\tau\text{-}$ 'ear' and even $\gamma\omicron\upsilon\nu\alpha\tau\text{-}$ 'knee'. But even so, it must be recalled with Forssman that $\kappa\rho\tilde{\alpha}(h)\alpha\tau\text{-}$, alone among such "secondary" heteroclites in Greek, has a direct trace of older $\kappa\rho\alpha h\nu\text{-}$ beside it ($\acute{\kappa}\alpha\rho\eta\nu\alpha$; cf. §§ 49.5 f.), while e.g. $\omicron\upsilon\alpha\tau\text{-}$ 'ear' (despite being matched up to a point by e.g. Arm. *un-kn*) shows no by-form pointing to $*\omicron u h\nu\text{-}$. Not even primary heteroclites (r/n -stems) tend to preserve direct traces of n -stem (rather than $\alpha\tau$ -stem) inflection in Greek. Furthermore, it is obvious that $\kappa\rho\alpha h\nu\text{-}/\kappa\rho\tilde{\alpha}h\nu\text{-}$ ($\rightarrow \kappa\rho\tilde{\alpha}h\alpha\tau\text{-}$), even if formed within Greek, was formed before laryngeals were eliminated. This means that even if $\kappa\rho\alpha h\nu\text{-}/\kappa\rho\tilde{\alpha}h\alpha\tau\text{-}$ is an innovation of the type ($\omicron\upsilon\alpha\tau\text{-}$) in question, it is the oldest-looking example of it in the language, and the assumption of a nom.-acc. $*\acute{\kappa}\alpha\rho$ extracted from oblique forms showing simple $*\kappa\alpha\rho$ before the endings is therefore much weakened, if not absolutely excluded.

Consequently, the only way of circumventing Forssman's objections to an alternate nom.-acc. $*\acute{\kappa}\alpha\rho$ formed analogically to putative oblique forms ($*\kappa\alpha\rho\text{-}\acute{o}s$ etc.) is to suppose that at an early stage Greek had two different words for 'head'—namely a $\acute{\kappa}\alpha\rho\tilde{\alpha}/*\kappa\alpha\rho\text{-}\acute{o}s$ plus a $X/\kappa\rho\tilde{\alpha}h\alpha\tau\text{-}\acute{o}s$. One would then have to say that the oblique $*\kappa\alpha\rho\text{-}$ served as the basis for an alternate nom.-acc. $*\acute{\kappa}\alpha\rho$ before disappearing, and that $\acute{\kappa}\alpha\rho\tilde{\alpha}$ was subsequently collapsed with oblique $\kappa\rho\tilde{\alpha}h\alpha\tau\text{-}$ into a new suppletive paradigm, while $*\acute{\kappa}\alpha\rho$ was preserved only in the expression $\epsilon\pi\acute{\iota} \acute{\kappa}\alpha\rho$. This is unappealing from every point of view. It is difficult to accept a scheme in which a "regular" analogical form ($*\acute{\kappa}\alpha\rho$) is ousted by precisely that "irregular" competitor ($\acute{\kappa}\alpha\rho\tilde{\alpha}$) that it was created to replace. Beyond this, the whole general approach of taking $\acute{\kappa}\alpha\rho\tilde{\alpha}$ from one paradigm and $\kappa\rho\tilde{\alpha}\alpha\tau\text{-}$ from a different (synonymous) one, together with its implication that the semi-parallel Vedic $\acute{s}ir\tilde{s}as/\acute{s}ir\tilde{s}n\text{-}$ is to be explained in the same exceptional manner, is inherently less plausible than accounting for both the Greek and Vedic paradigms simultane-

ously, if possible, as the (only partially) divergent outcomes of a single PIE word with a single paradigm (§§ 9.4, 9.7).

In short, it is neither attractive to assume a * $\acute{\kappa}\alpha\rho$ produced by paradigmatic levelling before the oblique ever became $\kappa\alpha\rho\alpha\eta\nu$ - (and $\kappa\alpha\rho\alpha\eta\nu$ - → $\kappa\alpha\rho\alpha\eta\alpha\tau$ -) in Greek, nor to assume a * $\acute{\kappa}\alpha\rho$ produced (again analogically) before the hypothetical creation of a suppletive paradigm. And if these solutions are rejected, Forssman’s argument is decisive. One can only agree that there is little chance that $(\acute{\epsilon}\pi\iota)\kappa\alpha\rho$ is a nom.-acc. neuter substantive meaning ‘head’.

26.6.1 An essential point, however, is that $\kappa\alpha\rho$ need not be such a nom.-acc. in order to share the stem of $\acute{\kappa}\alpha\rho\alpha$. This has recently been pointed out by E. Neu.⁸⁵ But from the impossibility of a nom.-acc. $\acute{\kappa}\alpha\rho$, Neu concludes that $\acute{\epsilon}\pi\iota \acute{\kappa}\alpha\rho$ is a prepositional phrase consisting of $\acute{\epsilon}\pi\iota$ and an extremely archaic endless locative $\acute{\kappa}\alpha\rho$ which reflects $\hat{k}r$ and corresponds exactly to the Hittite locative (*kit*)-*kar* ‘to/at the head’. The entire phrase $\acute{\epsilon}\xi \acute{\omicron}\rho\acute{\epsilon}\omega\nu \acute{\epsilon}\pi\iota \acute{\kappa}\alpha\rho$, in his view, means ‘from the mountains above (< on top < at/on the head)’ and is contrasted with $\acute{\epsilon}\varsigma \delta’ \acute{\alpha}\lambda\alpha$ ‘into the sea (below)’.

26.6.2 Concerning this interpretation, it may first be pointed out that even if $\acute{\kappa}\alpha\rho$ is originally a locative it is possible to take $\acute{\epsilon}\pi\iota \acute{\kappa}\alpha\rho$ (somewhat more naturally) as meaning ‘on(to) the head’ and then ‘headlong’. With verbs implying motion, $\acute{\epsilon}\pi\iota$ may be followed by the dative(-locative) as well as the accusative (and even genitive for that matter) in Homeric usage:⁸⁶ $\acute{\epsilon}\pi\iota \sigma\omicron\iota \dots \theta\acute{\omicron}\rho\epsilon$ (O 582), $\theta\epsilon\acute{\iota}\nu\alpha\iota \dots \acute{\epsilon}\pi\iota \gamma\omicron\upsilon\nu\alpha\sigma\iota\nu \dots$ (Z 92) etc. A form that is morphologically a locative (in PIE terms) need not necessarily be limited to real locative (as opposed to dative, directive and instrumental) function in Greek.⁸⁷

⁸⁵ Neu *Lok*, 27.

⁸⁶ See Chantraine *Gramm* 2, 107 ff.

⁸⁷ This, of course, is the result of the eventual merger of the inherited dative with the inherited instrumental and locative (which might have had at least a pseudo-directive function already before the merger—the locative of “goal reached”: Schwyzler-Debrunner, 155 f.; Chantraine *Gramm* 2, 79 f.; note also the formally locative adverbs of the type $\pi\omicron\iota$ ‘whither?’). This merger is virtually complete in Homeric usage, descriptively speaking.

If a locative $\acute{\kappa}\alpha\rho$ (endless) had simply been preserved as a free form in Greek (but cf. §§ 26.5, 26.8.6, 26.10.5), it would admittedly be unappealing to suppose that a relic locative of such antiquity could have come to function as a dative or instrumental merely on the grounds that most other (formal) locatives that continued to exist expanded their range of functions in this way. The putative locative $\acute{\kappa}\alpha\rho$ would prob-

An endingless locative of the shape $\hat{k}r$, however, is itself a very dubious proposition. Such a form would pre-suppose the existence of a root noun $\hat{k}(e)r$ - 'head' and would require that its endingless locative have a zero grade. Neither of these assumptions can be maintained.

1) It is fairly certain that root nouns could have endingless locatives in PIE. But when they did, it appears from the available evidence that the endingless locatives of simplex root nouns⁸⁸ showed either *e*-grade or \bar{e} -grade of the root,⁸⁹ but not zero grade. Possible examples include *dom-/dem-* 'house' : loc. *dēm* (GAv. *dām*), *d̥iēu-/diu-* 'day' : loc. *d(i)̥iēu* (L. *diū* 'by day',⁹⁰ RV *dyávi* < *d̥iēu* + *i* vs. *diví*), *dh̥uor-/dhur-* 'door' : loc. *dh(u)̥er* (Av. *duuarə*),⁹¹ *pod-/ped-* 'foot' : loc. **pēd* (if Irish *ís* 'below, under', which is synchronically a preposition with dative, ultimately reflects *pēd-su* - a locative plural 'at the feet' - with lengthened grade transferred from the original locative singular⁹²). This indicates that even if one were free to assume a root noun $\hat{k}er/\hat{k}r$ - (or $\hat{k}or/\hat{k}(e)r$ -) for 'head', its normal endingless locative should probably be reconstructed $\hat{k}ēr$. This preform, however, cannot be continued by a Greek $\kappa\acute{\alpha}\rho$.

2) Under certain special conditions (see § 26.8.1 ff. below), one could operate with the reduction of a hypothetical locative $\hat{k}er$ to $\hat{k}r$. But this possibility is not worth exploring here because the assumption of this root noun is itself unacceptable. Neither in the meaning 'head' nor 'horn'⁹³ is there any trace of it. In particular, all the words for

ably have been preserved in the first place only in an adverbialized locative function. But if the directive (or pseudo-directive) locative is at least relatively old, $\kappa\acute{\alpha}\rho$ could easily have been used with verbs of motion (or at least with verbs of putting, placing etc.) from the beginning in the meaning 'on(to) the head'. Neu's 'above' < 'on top' thus seems unnecessary.

⁸⁸ Forms like Skt. *par-út* 'last year' and *pūrve-dyú-s* 'the day before, yesterday, early' do not indicate that **ut* or **d̥iū* were possible locatives of the two root nouns in question. Cf. Schindler, *KZ* 81, 300 with note 1 and § 26.8.1 below.

⁸⁹ For a survey of endingless locatives cf., e.g., Brugmann *Grdr*² 2.2, 174 ff. Schmidt (*KZ* 27, 308) showed that the general rule for the ablaut of endingless locatives is that the stem-final element is one grade "stronger" than in the "weakest" cases (g.-abl. etc. zero : endingless loc. \bar{e} and g.-abl. etc. \bar{e} : endingless loc. \bar{e}).

⁹⁰ As in *noctuae et diu* (Plaut. *Cas.*, 823 etc.).

⁹¹ If this form, attested only once (V. 3, 29) is not a faulty spelling of *duuairi* (cf. Kellens *Noms-racines*, 385). But even so, a *duuairi* (with full grade root vs. e.g. RV acc. pl. *dúras* - cf. e.g. Ved. loc. *dyáv-i* vs. *div-i*) could itself point to a full-grade endingless locative indirectly (cf. addendum 3 to § 50.5).

⁹² OIr. *ís* < *pēd-su* cf. Pedersen *VGKS* 1, 50; Pokorny *IEW*, 790 with the further comparison of Alb. (*për*)-*posh* 'below'.

⁹³ Cf. § 4.2

'head' made on $\hat{k}er$ - either require at least a $\hat{k}r-(e)h_2$ - (κάρα, κρήδεμ-vov etc. as above⁹⁴), or are consistent with it (ἵγκρος as above). And most are still more elaborate formations (see below). If there was an endingless locative to this word for 'head' at all, it would have been to the $-(e)h_2$ -stem.

26.6.3 Consequently, Greek κάρ can be an endingless loc. of 'head' only if it can reflect $\hat{k}r h_2$ most immediately. Phonologically, $\hat{k}r h_2 > \kappa\alpha\rho$ is not to be ruled out. In a certain number of cases there may be recognized a *sandhi* phenomenon by which a laryngeal in absolute final position after a vowel (including syllabic resonants) has been lost without further effect in pause and before words with an initial vowel.⁹⁵ This hypothesis has been invoked to explain the apparent "shortening" in vocatives such as RV *yamī* (< $-ih_2$ cf. nom. sg. *yamī-h*), RV *devī* (< $-ih_2$ cf. nom. *devī*) and AV *vadhū* (< $-uh_2$ cf. nom. *vadhū-h*); Hom. νόμφα and OCS *ženo* (< $-eh_2$ cf. noms. νόμφη and *žena* respectively). The same explanation may be applicable to feminine *-ti*-stem instrumentals like RV *sadhá-stutī*, AV *á-smṛtī* (with $-tī < -ti-h_1$), which tend to occur at the end of a *pāda*, and which may be morphologically identical to the Greek adverbs in $-tī$ of the type Hom. μελεῖστί, Pind. ἄβοᾷτί.⁹⁶ And the Greek thematic neuter plurals (ἐργᾶ etc. < $-e-h_2$) could also figure here if interpreted as the result of the generalization of an $-ā$ doublet favored by the $-ā < -h_2$ of the consonant stems in the neuter plural. Another plausible case in Greek is that of εἴκοσῃ / (F)ίκατῃ 'twenty' which seems to show $-ī < -iH$ (cf. L. *uīgintī*). One might also add νέκταρ 'drink of the gods' if this really reflects *nek-tṛH*- 'overcoming death' (cf. νέκυσ, νεκρός etc.), with a second member identical to that of Ved. *viśva-tur*- 'overcoming all'.⁹⁷ Although none of

⁹⁴ See § 28 for evidence outside Greek.

⁹⁵ Beekes *Development*, 145 with references to Kuiper, *India Antiqua*, 208 ff., *Shortening*, and *Die Sprache* 7, 16–20.

⁹⁶ Schwyzler GG, 623 with further references. Beekes (*Development*, 160) rejects the comparison of these Gk. $-tī$ adverbs with the Vedic $-tī$ instrumentals on the grounds that the Homeric $-tī$ forms (e.g. ἀναμωτί) all present the metrical structure $\cup - - -$, while the $-tī$ forms scan $(\cup) \cup - \cup$ (e.g. μελεῖστί, ἐκητί), and that this makes it plausible that the $-tī$ forms are metrical lengthenings of antispastic sequences $(\cup - - \cup)$ that are otherwise difficult to use in hexameters. But the usual Homeric device for accommodating antispastics is to lengthen the first syllable—not the last: Ἀπόλλωνα, Ὀλύμπιο etc. (Chantraine *Gramm.* 102). Beekes' metrical account of the $-tī$ forms is therefore not compelling, and the possibility of equating these Gk. adverbs with the Vedic $-tī$ instrumentals remains open.

⁹⁷ Cf., e.g., Chantraine *DELG*, 741 f. for literature.

the cases just mentioned involves a monosyllabic pre-form, there is no obvious objection to this loss of a final laryngeal in monosyllables, and it is therefore conceivable that a $\hat{k}r h_2$ could result in Greek $\kappa\alpha\rho$.

26.6.4 From a morphological point of view, however, our endingless locative $\hat{k}r h_2$ ⁹⁸ is possible for the $\kappa\alpha\rho$ of $\varepsilon\pi\kappa\alpha\rho$ only on the basis of certain further assumptions, which ought to be made explicit. The structure of the normal endingless locative of a consonant stem consisting of root + suffix can be described, following Johannes Schmidt,⁹⁹ as having an ablaut grade in its suffix that is one grade "stronger" than that of the "weakest" cases. In support of this descriptive statement, Schmidt gives examples like Skt. loc. *sūnāu* : dat. *sūnāve* (- $\bar{e}u$: - $\bar{e}u$ -) but loc. *āsān* : dat. *āsné* (- $\bar{e}n$: - \bar{n} -) and others. The list can easily be extended. But the main point is that this state of affairs admits of no endingless locative with a zero-grade suffix,¹⁰⁰ and an endingless locative to $\hat{k}r-(e)h_2$ - 'head' with the form $\hat{k}r h_2$ therefore fails one of the few tests that can be applied. Nor may one assume that an original locative $*\kappa\rho\alpha$ (< $\hat{k}r-e h_2$) has been replaced by $\kappa\alpha\rho$ as a result of paradigmatic levelling within Greek. The objection that Forssman raised to an analogical nom.-acc. $*\kappa\alpha\rho$ would apply here too: the paradigm has apparently been heteroclitic for some time, and the usual kind of levelling consequently cannot be invoked without complications.

26.7 The result of these considerations is that $\kappa\alpha\rho$ is likely to be neither a nom.-acc. that somehow manages to coexist with $\kappa\alpha\rho\alpha$, nor simply the original endingless locative¹⁰¹ made on the stem of $\kappa\alpha\rho\alpha$ rather than on that of oblique $\kappa\rho\bar{\alpha}(h)\alpha\tau$ -. There are, however, other possibilities to take into account.

Both in Greek and elsewhere are found expressions that function as adverbs (or even pseudo-prepositions), and that consist of an adverb-

⁹⁸ We need not consider here the question of whether the endingless locative of a heteroclitc (cf. § 26.4 f.) could ever have the stem of the nom.-acc. rather than that of the other oblique cases. Such an analysis has been suggested for some forms (*údhar* RV 10.61.9, *áhar-ahar* RV 2.30.9 etc.—but see W-D 3, 311; YAv *zafarə* V.3, 32—Bartholomae *AirW*, 1657; Hitt. dat.-loc. $\bar{E}-ir$ beside *pami*). The point here, however, is that regardless of whether there was such a type, an endingless locative $*\hat{k}r h_2$ as a free form is not likely.

⁹⁹ Cf. note 89.

¹⁰⁰ Vedic (*vr̥kī*-type) locatives in - \bar{i} (e.g. *gaurī*)—whence \bar{u} -stem locatives in - \bar{u} (beside - \bar{v} : e.g. *tanū* vs. *tanvī*)—are probably not endingless (despite W-D 3, 170 and 188—cf. Kuiper, *India Antiqua*, 208).

¹⁰¹ On Hittite *kit-kar* see §§ 28.4 f.

ial element (preposition/preverb) plus a substantive. Instances in Greek include ἐγγύ(ς) 'near(by)', ἀντικρῦ 'opposite, straight (on), out-right' / ἄντικρυς 'straight (on), openly', and πρόχνη 'to the knees; utterly'. As it happens, the substantive included in all three of these expressions is even a body-part term (details below). The adverbial ἐπίκρα is perhaps best judged in light of these expressions. From a historical point of view, however, there are at least three theoretically possible ways of analyzing them.¹⁰² This requires an excursus before the full range of possibilities for ἐπίκρα can be evaluated.

26.8.1 There are a certain number of cases in which an old prepositional (or adverbial) phrase undergoes a sort of univerbation and results, descriptively, in a new adverb (which may then itself become a preposition). This would seem to be the origin of an adverb like ἐκποδῶν 'out of the way' (A. +), which began as a prepositional phrase ἐκ ποδῶν, but became a unitary adverb and consequently had its accent rearranged.¹⁰³ Perhaps one step more archaic is a case like ἐγκυτί 'to the skin' (Archil.), which looks not so much like the "univerbation" of a prepositional phrase (in the usual sense), but rather like the fusion of a purely adverbial ἐν with an adverbial dat.-loc. κυτ-ί (cf. L. *cutis* 'skin') with the force of a directive or end of motion: 'in(wards) to the skin, in(wards) as far as the skin'. Other examples could easily be added.¹⁰⁴

An essential point for present purposes, however, is that this is a kind of development that can obviously take place repeatedly and at successive stages. In fact, there are some cases that look like the result of a comparable process in PIE itself. These are instances which are plausibly taken as univerbations that occurred early enough to have subsequently undergone apophonic reductions.

The *r*-stem $\hat{g}hes-(e)r-$ 'hand', for example (Hitt. *keššar*, Gk. χεῖρ), would be expected to have an *-i* locative of the structure $\hat{g}hes-r-i$. And this is the structure to which both Hitt. *kišri*¹⁰⁵ and Gk. χεῖρί point. Armenian and Greek, however, continue a *me-ḡhsri* (μέχρι 'as far as, until' = *merj* 'near') with a monosyllabic *-ḡhsri* that would be altogether unexpected as the locative of $\hat{g}hes-(e)r-$ as a simplex. This suggests that what was originally a phrase consisting of *me* (cf. Gk. με-ς as

¹⁰² In the following discussion of these various possibilities I am much indebted to J. Schindler for a number of comments and suggestions.

¹⁰³ Cf., e.g., Vendryes *Traité*, 93.

¹⁰⁴ Cf. Schwyzler *GG*, 625.

¹⁰⁵ Beside *kiššari* and *kišširi*.

in μέσ-φα, μέσ-τε etc.) and locative *ghesri* became PIE **mégghesri*, whence *mégghsri*. Similarly, the root noun *uot-/uet-* 'year',¹⁰⁶ whose normal *i*-locative *uet-i* would seem to be reflected directly by Hitt. *uitti*, presents a locative reduced to *-uti* in the adverb *péruti* 'last year' (Gk. πέρυσσι/-τι, Arm. *heru*, OIc. (*i*)*fjord* etc.).¹⁰⁷ Once again one could operate with a hypothetically original phrase **per ueti* 'in the previous year'¹⁰⁸ which became **pérūeti* and then *péruti*.

26.8.2 Of the Greek expressions in question (§ 26.7), ἐγγύς for example, could be taken as a case of exactly this sort. That is, one would be free to suppose that the root noun *goṃ(H)-s/gu(H)-es* (§ 24.1.2) had an endingless locative *geṃ(H)*,¹⁰⁹ and that an **éngeṃ(H)*,

¹⁰⁶ The assignment of the root noun for 'year' to the *o/e* type may not be absolutely secure (Schindler, *BSL* 67, 33), but seems to me to be more attractive than a *uet-/ut-* as the starting point for *neho-uōt-ṃ* (> Gk. νέωτα)—even if the latter provides evidence only for a compositional *-uōt-*. It must be admitted, however, that νέωτα does not necessarily reflect a *-uōt-* of any kind (cf. Frisk *GEW* 2, 313; Szemerényi, *Studia Pagliaro* 3, 233—endorsed by Chantraine *DELG*, 749 f.). And a *uet-/ut-* (for the structure cf. *tuēk-/tuk-* 'outer form'—Schindler, *BSL* 67, 36 f.) would even be somewhat more convenient in dealing with the analysis of PIE *péruti* 'last year' (cf. next note). But since one could (or even should?—cf. addendum 3 to § 50.5) expect a *uet-/ut-* to make a locative *uet-i* (Hitt. *uitti*), the question is not an absolutely crucial one here.

¹⁰⁷ Skt. *parút* 'last year' (Pāṇ. +) differs from the related forms both in accent and in its lack of the loc. ending *-i*. The accent is to all appearances secondary both in view of the comparative evidence and on general principles (**pérūt*?). As to the descriptively endingless locative *-ut* that it seems to present, there is yet a further problem. For if the root noun really had a paradigm *uot-/uet-*, one would theoretically expect an endingless locative *uēt* (cf. *dom-/dem-* 'house': loc. *dēm* (§ 26.6.2)). But it is at least doubtful whether a lengthened grade would have undergone complete apophonic reduction to zero when unaccented, and it is therefore unappealing to trace *parut* back to a hypothetically expectable *pérūēt*.

As a result, one might think of dealing with both the surprising accent of *parút* and its lack of the *-i* simultaneously by supposing that an inherited **páruti* (= πέρυσσι) became *parút* by assimilation to adverbs like *sanát* 'long since, since long ago', which itself has an "adverbial" shifted accent (: *sána-*). Still another alternative is that of starting with a *uet-/ut-/loc. uēt(i)* 'year' (cf. previous note) and then simply supposing that πέρυσσι reflects *pér-ueti* (> PIE *péruti*), while it is *pér-uet* that eventually yielded *parút* (still with shifted accent, however).

¹⁰⁸ For the semantics of *per* in hypothetical pre-PIE *pér-ueti* cf. (Pokorny *IEW*, 810 f.) especially the Baltic and Gmc. forms pointing to *per-no-/per-niō-* 'of last year, old'.

¹⁰⁹ If this root noun for 'hand' (§ 24.1.2) may be conjecturally assigned to the *o/e* type in the first instance (the type in which it would fit best by far from the semantic point of view—cf. Schindler, *BSL* 67, 36), its very most original endingless locative would theoretically have to have been *gēṃ(H)*, not *gém(H)*. But since the root is one that ends in *-eR(C)*, one could expect its oblique cases (following the view of Schindler, *BSL* 67,

with univerbation, became *éngu(H)* 'in, at hand' very early. This would leave only its accent and the final *-s* (segmentable in any event – cf. *ἐγγύ-θι* 'nearby', *ἐγγύ-θεν* 'from nearby') unaccounted for. But both may be explained simultaneously as modelled on nom.-acc. neuter *u*-stem adjectives used adverbially: **ἐγγυ* would be remodelled to **ἐγγύ* / *ἐγγύς* by assimilation to adverbs like *ἰθύ* / *ἰθύς* 'straight on/at' and *εὐθύ* / *εὐθύς* 'straight (to)'.

There is little doubt in any case that there was once an *ἐγγύ* beside the form with adverbial *-s*, since Hom. *μεσ(σ)η-γύ* 'in the middle, between, meanwhile' with its by-form *μεσση-γύς* would seem to have been modelled on a pair **ἐγγύ* / *ἐγγύς*. This *μεσ(σ)η-γύ(ς)* offers one more indication that could prove to be important. It shows that a complex adverb (*ἐγγύ(ς)* in this case), whatever its history, could serve as the basis for new parallel formations with a different "first member" even if the substantival "second member" was not synchronically analyzable any longer.

26.8.3 Things are less clear in the case of *ἀντικῶ* 'opposite, straight, (out)right' and *ἄντικρυς* '(out)right, openly'. It would seem reasonable to suppose that one of the by-forms is older than the other, but it is difficult to be sure which of them that should be. Furthermore, *ἀντικῶ* / *ἄντικρυς* has a fairly good chance (better than that of *ἐγγύς* in any case) of reflecting something other than a "univerbation" in the first place (§ 26.10.2). Therefore, although it may be pointed out that both *ἀντικῶ* and *ἄντικρυς* could theoretically be explained as old univerbations of *h₂enti* (*ἀντί*) with case forms of a *u*-stem substantive *k(e)r-u-* 'form, figure, body' (§ 8.3), it is not worthwhile to present such a hypothesis in detail. As for *πρόχῃ* 'to the knees, utterly', it is perfectly possible that a univerbation is to be recognized here, and more specifically that the second element is a reduced *-ḡnu* 'knee'. This is discussed in Appendix II.

35 f.) to have introduced zero grade as a replacement for the original *e*-grade already at a relatively early stage (within the history of the protolanguage; thus e.g. gen.-abl. *ḡu(H)-s* → *gu(H)-és*). In addition, this root noun, if from a *set* root, might eventually have generalized zero grade even to the nom. and acc. (cf. note 53). In any event, as soon as the oblique cases had zero-grade *gu(H)-* as the stem shape, it is easy to imagine that the endless locative could have been analogically (re)formed as *ḡu(H)* by the application of the general rule (§ 26.6.2) that the endless locative is regularly one grade "stronger" than the "weakest" cases. In similar fashion, PIE *dh₂or-* / *dh₂ur-* 'door' would have had an endless locative *dh(u)ḡer* (if this is what is represented by Av. *dunara* – note 91).

26.8.4 To return to $\acute{\epsilon}\pi\iota\kappa\alpha\varrho$ itself, one possible type of analysis (perhaps among others) is that of seeing it as a "univerbation" like $\acute{\epsilon}\gamma\gamma\acute{\upsilon}(\varsigma)$. Since the $-\kappa\alpha\varrho$ element (if it means 'head') would have to reflect $-\hat{k}r-h_2$, and since no normal, original type of consonant stem inflection seems to include any case-form of the structure zero-grade root plus zero-grade suffix and no ending, there is every chance of supposing that the requisite $-\hat{k}r-h_2$ of this univerbation had undergone reduction of the type seen in *me-ġhsri* (§ 26.8.1). Our $\acute{\epsilon}\pi\iota + \hat{k}r-h_2$ would then come from an older $\acute{\epsilon}\pi\iota + \hat{k}er-h_2$ or $\acute{\epsilon}\pi\iota + \hat{k}r-\acute{e}h_2$,¹¹⁰ where $-\hat{k}er-h_2$ or $-\hat{k}r-\acute{e}h_2$ was a terminal accusative or an endingless locative in directive or terminal function. No matter which of these case-forms is ultimately reflected by $-\kappa\alpha\varrho$, the reconstruction $\hat{k}er-h_2$ is unsatisfactory. An accusative $\hat{k}er-h_2$ 'head' necessarily implies a neuter nom.-acc. $\hat{k}er-h_2$. But this makes the Greek simplex neuter nom.-acc. $\kappa\acute{\alpha}\rho\alpha$ very difficult to explain (§§ 26.3 ff.). An endingless locative $\hat{k}er-h_2$ (with a zero-grade suffix) is also unattractive (§ 26.6.4). It therefore seems best to start with $\acute{\epsilon}\pi\iota + \hat{k}r-\acute{e}h_2$ (nom.-acc. or loc.), and since neuter consonant-stem nominative-accusatives with a suffix of the structure $-\acute{e}C$ are not a sure possibility, the best reconstruction for a univerbation as the source of $\acute{\epsilon}\pi\iota\kappa\alpha\varrho$ seems to be $\acute{\epsilon}\pi\iota + \hat{k}r-\acute{e}h_2$, an endingless locative whose structure is unobjectionable. The early reduction of $\acute{\epsilon}\pi\iota + \hat{k}r-\acute{e}h_2$ to $\acute{\epsilon}\pi\iota\hat{k}r-h_2$, as just noted, can be paralleled.

26.8.5 From the formal point of view, therefore, it would seem possible to trace $\acute{\epsilon}\pi\iota\kappa\alpha\varrho$ to a univerbation of adverbial $\acute{\epsilon}\pi\iota$ plus locative $\hat{k}r-\acute{e}h_2$. In Greek itself, $\acute{\epsilon}\pi\iota$ with a dative(-locative) in this (terminal) function can be paralleled up to a point: Π 310–11 ... $\acute{\epsilon}\pi\iota$ γαίῃ / $\kappa\acute{\alpha}\lambda\pi\epsilon\varsigma$... 'he fell (on)to the earth'; P 300 ... πέσε ... $\acute{\epsilon}\pi\iota$ νεκρῷ 'he fell on(to) the corpse'; Ψ 727–8 ... $\acute{\epsilon}\pi\iota$ δὲ στήθεσσιν Ὀδυσσεὺς / $\kappa\acute{\alpha}\lambda\pi\epsilon\varsigma$... 'Odysseus fell on(to) his (Ajax') chest'. It may be noted, however, that $\acute{\epsilon}\pi\iota$ plus a directive/terminal dative appears to occur, at least in Homer, only with an external end of motion. When someone falls onto a part of his own body with $\acute{\epsilon}\pi\iota$, the body-part is accusative.¹¹¹ It is not clear how serious a drawback this is to the reconstruction of $\acute{\epsilon}\pi\iota + \hat{k}r-\acute{e}h_2$ (loc.), since a hard and fast distinction in case usage between external and internal ends of motion would be practically impossible to

¹¹⁰ A lengthened-grade $-\hat{k}er-h_2$ or $-\hat{k}r-\acute{e}h_2$ is not likely to have been susceptible to the reduction in question.

¹¹¹ Ebeling *Lex* I, 446—especially col. 2, ll. 29 ff.

establish for the remote stage immediately preceding the univerbation of $\text{epi} + \hat{k}r-\check{e}h_2$ and its subsequent reduction to $\text{epi}\hat{k}r\check{e}h_2$.

Although univerbation is not the only possible explanation for $\text{ἐπι}\kappa\alpha\omicron$ (any more than it is for $\text{ἀντικ}\omicron\upsilon-(\varsigma)$ or $\text{ἐγγύ}-(\varsigma)$, it is somewhat favored by the occurrence in Hittite of an unambiguously locative $-kar$ 'at the head' (§ 28.5). And even though this itself may be interpreted in more than one way, it does at least seem that the only way of accounting for $(\text{ἐπι})\kappa\alpha\omicron$ and Hitt. $-kar$ simultaneously would be to see them both as reflecting a locative $\hat{k}r\check{e}h_2$ that was reduced in a univerbation of adverb + loc. $\hat{k}r-\check{e}h_2$.

26.8.6 A final point is that the reconstruction of a locative $\hat{k}r-\check{e}h_2$ that was reduced to $-\hat{k}r\check{e}h_2$ (in one or more univerbated adverbial expressions of PIE date) need not conflict with the high probability, as noted by Forssman and maintained above (§ 26.5), that $\kappa\acute{\alpha}\rho\alpha$ has had a heteroclitic oblique from very early on. For however early one wishes to place the origin of the heteroclitic paradigm seen in Greek, it is still perfectly possible to assume that it was an innovation (cf. III c), and that up until that time there had indeed been oblique forms made on the h_2 -stem that is still represented by nom.-acc. $\kappa\acute{\alpha}\rho\alpha$. If so, there is no difficulty in seeing how a purely adverbial $-\hat{k}r\check{e}h_2$, reduced by an archaic apophonic process, disengaged from the simplex paradigm that gave rise to both it and nom.-acc. $\kappa\acute{\alpha}\rho\alpha$, and not even a free form, could have escaped replacement. Moreover, this holds even if the elimination of $\hat{k}r-(e)h_2$ as an oblique stem occurred already in the protolanguage (but cf. §§ 54 ff.) and thus lies behind the apparent identity of $\kappa\omicron\alpha\alpha\tau$ -to Ved. $\acute{s}i\check{r}\check{s}h-$ in some (as yet unspecified) way. For this would only mean that some adverb(s) in $-\hat{k}r\check{e}h_2$, already isolated and extra-paradigmatic in (the latest stages of) the protolanguage, got inherited as such into Greek (cf. § 28.5.3).

26.9.1 In any case, these univerbations are to be distinguished from two kinds of genuine compounds (both adjectival) that are relevant to the general question of the analysis of $\text{ἐπι}\kappa\alpha\omicron$. The first of these are the prepositional governing compounds. They have a preposition as first member and a substantive as second member. In sense, the preposition seems to "govern" the substantive. To cite from Greek only a few Homeric examples:¹¹² ἀποθύμιος '(departing) from one's desires (θυμός), unpleasant'; ἐννυχος/ἐννύχιος '(occurring) at night'; $\text{ἐπά-$

¹¹² Risch², 188 f.; Cf. W-D 2.1, 308 ff.; Leu², 402 f.

ρουρος '(working) on the land (ἄρουρα)'; καταχθόνιος '(dwelling) beneath the earth (χθών)'; πρόθυρον '(space) in front of the door (θύρα)'; ὑπουράνιος 'under the heavens (οὐρανός)'. The type is found elsewhere as well: Ved. *ántas-path-a-* '(found etc.) on the way', *tiró-ahn-ya-* '(occurring) day before yesterday', L. *subiugius* '(attached) under the yoke', Goth. *anda-naht-i* 'evening' (< 'up against the night') etc.

The vast majority of such compounds have either *-o-* or *-iġo-* as a compositional suffix,¹¹³ as in all the examples above. There are, however, some cases in which there is no compositional suffix at all¹¹⁴—RV *abhí-dyu-* '(reaching, moving) toward the sky'; Av. *ā-(x)šnu-* '(extending) to the knee(s)'; *anu-zafan-* '(running) along the mouth'; L. *ex-lex* '(standing) outside the law, lawless'. In Greek itself, plausibly old prepositional governing compounds that lack a suffix are especially rare. In Homer, the only one seems to be ἀντιάνειρα '(standing) in place of a man, equal to a man' (if indeed this really is its precise original meaning in Ἀμαζόνες ἀντιάνειραι). But even this apparent case could result from the reinterpretation of a compound of a different type.¹¹⁵

26.9.2 A final point that should be made concerning such compounds is that since they are adjectival, the adverbialization of the neuter nom.-acc. is not unexpected. Some Vedic examples of adverbialized governing compounds would be RV *abhi-nabh-yám* 'to the clouds' (: *nābh-*¹¹⁶) and AV *ud-āp-yám* 'upstream' (these with compositional

¹¹³ Sommer *Nominalkomp.*, *passim* with summary 197 ff.

¹¹⁴ Not to be classified as suffixless governing compounds, of course, are those whose second member is an *-o-* or *-iġo-* stem already as a simplex (e.g. ἀμφί-βροτος 'covering the whole man': βροτός 'human being'). In a few cases, prepositional governing compounds seem to show a suffix *-i-* (e.g. ἔνυδρις 'otter', Lat. *perennis* '(lasting) through the year').

¹¹⁵ Risch², 188 classifies ἀντιάνειρα as a governing compound—and therefore a suffixless one since the final (*-ih₂*) formant is in any case not a compositional suffix. As such it could be the feminine to what appears in Homer only as the name Ἀντι-ήνωρ (and cf. Hes. ὑπερήνωρ—PN only in Hom. but implied by ὑπερηνορέων). And Sommer (*Nominalkomp.*), while emphasizing that "hypostases" (= prepositional governing cpds.) had *-o-* or *-iġo-* compositional suffixes as a rule from early on (107 ff., 113), makes an exception for hypostases whose second member was a masc. or fem. *r*-stem (108, 141, 170 ff.), and accordingly considers Ἀντήνωρ, ὑπερήνωρ, and Μετάνειρα to be unsuffixed hypostases of this exceptional type (although ἀντιάνειρα is a bahuvrīhi in Sommer's view—*Nominalkomp.* 171). But whether or not one follows Sommer in granting that a few hypostases without compositional suffix might be old, the type remains very rare in general and offers little encouragement for reconstructing such a compound with second member $\acute{k}r-(e)h_2$ - 'head'.

¹¹⁶ Cf. Geldner, note to RV 1.174.8.

-*ya-*); AV *praty-ákṣ-am* 'in plain sight' and its antonym B *parókṣam* 'out of sight' (with compositional *-a-*). In Greek, one might point to an adverb like ὑπέροχα 'beyond the predestined' (B 155) if this is the adverbialized nom.-acc. neut. pl. of a *ὑπέροχος, -ον (: μόρος, Thess. μορῶ).

26.9.3 On the semantic side alone, ἐγγύ(ς) and ἀντιχρῶ could easily be taken as adverbialized nom.-acc. neut. singulars of governing compounds with no compositional suffix. The compounds themselves would simply have been adjectival with the meanings '(situated) in the hand' (> 'near') and '(standing) before the form (of)' (> 'opposite') respectively. Nor is there any real semantic difficulty with interpreting ἐπικαρῶ '(falling) onto the head' in the same fashion. There are parallels for a governing compound that implies motion: RV *ánu-path-a-* '(going) along the way' etc.

One could then go on to suggest that the apophonic distinction between (ἐπι)καρῶ and nom.-acc. κάρῶ is due to the same factor as accounts for the difference between Av. *ā-(x)šnu-* '(extending) to the knees' and RV nom.-acc. *jānu* 'knee' (*-ḡnu* vs. *-ḡōnu*)—namely that a given substantive can show one pattern of inflectional ablaut as a simplex and another as the second member of a (suffixless) compound.¹¹⁷ In that case, ἐπικαρῶ would not require levelling within the (simplex) paradigm of κάρῶ, and Forssman's objection to such an assumption (§§ 26.4 f.) could again be met.

It is not worthwhile, however, to present this interpretation in detail here. The rarity of prepositional governing compounds with no compositional suffix makes it somewhat risky in general, and since there is no lack of alternatives in the case of ἐπικαρῶ (cf. § 26.8.4 above and § 26.10.2 below), it is perhaps best not to pursue this line any further.

26.10.1 A preverb/preposition plus a substantive can also form a possessive compound (*bahuvrihi*).¹¹⁸ In this type of compound the suffixless type is well-represented, but there are also many with *-o-*, and *-i-* is found too.¹¹⁹ When the adverbial first member in a *bahuvrihi* of this

¹¹⁷ Cf. e.g. W-D 2.1, 94 f., 99 ff.; Schwyzler GG 1, 449 in passing; Risch², 226. It is questionable, however, whether special compositional apophony is old outside of possessive compounds. Cf. § 26.10.3 as well.

¹¹⁸ For example, W-D 2.1, 280 ff.; Risch², 188 f.; Leu², 397 f.

¹¹⁹ For possessives with compositional *-o-* cf. W-D 2.1, 108 ff.; Schwyzler GG 1, 450 f.; Risch², 227; Leu² 278, 398. For apparent compositional *-i-* W-D 2.1, 105 f.; Schwyzler

sort is used at the same time as an actual preposition in a given language, the banal synchronic interpretation of the form as a whole will often accommodate a sort of "reflexive":

Gk. ἔνθεος 'having a god in (oneself)', ἀμφιάλος 'having the sea on both sides (of itself)', ἐπίφρων 'having wits (φρένες) to (oneself)' cf. Av. *aipi-aβra-* 'having clouds upon (itself)'; L. *exsensus* (-a, -um) 'having the power of perception out of, gone from (itself)'; RV *ádhi-nirñij-* 'having magnificent garments on (oneself)'.

But this is something of a mirage. On the one hand, adverbial elements that do not themselves occur as prepositions in some language do enter *bahuvrihis*:

Gk. κατωκάρα (Pi., Ar.) 'with the head down' (itself adverbialized); ŚB *úd-bāhu-* 'with the arms up'; Av. *vi-zafana-* 'with the oral cavity wide open'; L. *ancipes* 'with a head on both sides' etc.

In addition, a point of more direct applicability here, it often happens that a *bahuvrihi* of this general type has a first member that does function as a preposition elsewhere in the language, but is strictly adverbial in the compound. On the surface, this correlates with the inadmissibility of a "reflexive" interpretation (cf. above):

Gk. ἀπηνής 'with the face (turned) away (from something else)', ὑπερ-θυμός 'having spirit in excess', προσκηδής 'whose care, concern is (directed) toward (someone else)'; L. *praeposterus* 'having what is later in front'; RV *ádhy-akṣ-a-* 'having one's eye on (something else), overseer', *abhi-jñú* 'with the knee (directed) toward (something else), with bent knee(s)' ¹²⁰ (adverbialized).

In short there need be no essential distinction drawn between the type ἔνθεος (potential "reflexive" interpretation) and the type ἀπηνής (where no such interpretation is possible).

Finally, it may be noted that the neut. nom.-acc. sg. of the possessive compounds of the type(s) just illustrated are frequently used adverbially. Gk. κατωκάρα 'head down' and Ved. *abhi-jñú* 'with/on bended knee' have already been mentioned as examples of this. One

GG 1, 450; Risch², 228; Leu² 346, 398. Even -*ijo-* can sometimes be interpreted as a compositional suffix of *bahuvrihis* (W-D 2.1, 107; Leu² 265, 290–*acupedius*), but the *communis opinio* has it that -*ijo-* is old only in prepositional governing compounds. In the view of Sommer (*Nominalkomp.*, *passim* cf. index 204), the use of compositional suffixes in *bahuvrihis* was originally very severely restricted.

¹²⁰ Geldner, note to RV 1.37.10 c.

could add the Ved. nom.-acc. $ny\grave{a}k$ (< $ni-h_3ek^{\#}$ vs. oblique $n\bar{i}c$ - < $ni-h_3k^{\#}$ -) 'with the face down', which is regularly used as an adverb meaning 'downwards' (so too the instrumental $n\bar{i}c-\acute{a}$). In Latin, *praeceps* 'head first', which is both the m./f. nom. sg. and the neut. nom.-acc. sg. (cf. *in praeceps*, *per praeceps*), eventually becomes an adverb meaning 'headlong'. There are many other such cases.

26.10.2 The implications for the analysis of some of the Greek expressions under consideration are substantial. In the case of $\epsilon\gamma\gamma\acute{\upsilon}(\varsigma)$ 'near(by)', it would seem that we are not offered an alternative (at least not directly) to the possibility already mentioned (§ 26.8.2), since there would appear to be no way at all of interpreting it as a bahuvrihi. But there is now a very viable second analysis for $\acute{\alpha}\nu\tau\iota\kappa\rho\acute{\upsilon}$ 'right opposite' ($\theta\epsilon\omicron\iota\varsigma \acute{\alpha}\nu\tau\iota\kappa\rho\acute{\upsilon} \mu\acute{\alpha}\chi\epsilon\sigma\theta\alpha\iota$ E 130, e.g.). One is free to start with a possessive compound made up of h_2enti 'in the presence (of), before' and the u -stem (§ 8.4) $kor-u$ - 'form, figure, body'. The original meaning of this compound could either have been 'with (someone's) form before (oneself)' or 'with (one's) form before (someone else)'. In either meaning, the adverbialized nom.-acc. neut. would seem an acceptable source of $\acute{\alpha}\nu\tau\iota\kappa\rho\acute{\upsilon}$. And more particularly, one might even suppose that a phrase like $\epsilon\kappa\tau\omicron\rho\omicron\varsigma \acute{\alpha}\nu\tau\iota\kappa\rho\acute{\upsilon}$ (Θ 301) once meant precisely 'with (his) form in the presence of Hector'.¹²¹ Under this interpretation, one would be inclined to take $\acute{\alpha}\nu\tau\iota\kappa\rho\upsilon\varsigma$ 'openly, straight (on)' as the same adverb plus adverbial $-\varsigma$ (but with an archaic accent).

As to $\epsilon\pi\iota\kappa\rho\acute{\upsilon}$, it seems conceivable that this too is an adverbialized nom.-acc. neut. of a bahuvrihi. If one starts with an old enough possessive compound of epi in strictly adverbial function (§ 26.10.1) plus the $\hat{k}r-(e)h_2$ - of $\kappa\acute{\alpha}\rho\alpha$ etc., with an original meaning like 'with the head (falling etc.) onto (something else)', there would seem to be no difficulty with a neut. nom.-acc. $epi-\hat{k}rh_2$ which, once adverbialized, means 'head-on, headlong'. The phonology also presents no problem (§ 26.6.3). And Vedic $abhi-jñ\acute{u}$ 'with the knee (directed etc.) toward (something else)' > 'with bent knee' would seem to be exactly parallel in all relevant respects.

26.10.3 This way of analyzing $\epsilon\pi\iota\kappa\rho\acute{\upsilon}$, an alternative to the one already given (§ 26.8.4 ff.), will also allow Forssman's objections to a nom.-acc. $\kappa\rho\acute{\upsilon}$ to be met. For as soon as the possibility of a bahuvrihi

¹²¹ For compounds with first member $\acute{\alpha}\nu\tau\iota$ - in which the $\acute{\alpha}\nu\tau\iota$ - descriptively governs a substantive outside the compound cf. Fraenkel *Agamemnon*, II, 13 f.

with no compositional suffix is taken into account, the problem of the apophonic distinction between $-καρ$ and simplex $κάρα$ is removed. Compounds of this kind show inflectional ablaut in their second (substantival) members, and the pattern of the ablaut is regularly independent of that shown by the same substantive as a simplex.

To take only one type of example, the class of neuter u -stems made up of formations like $són-u$ / $sn-éu$ -/ $sn-u$ - 'back' (RV $sánu$ / $snóh$ / $snúbhih$) and $gón-u$ / $gén-u$ -/ $gn-u$ - 'knee' (RV $jánu$, Av. $žnubiiō$, L. *genu* etc.) descriptively present a kind of proterokinetic inflection (at least in Indo-Iranian) although they may ultimately stem from an acrostatic type.¹²² In either case, it is certain that these nouns did not have zero-grade root vocalism in the nom.-acc. of the simplex. As second members of possessive and governing compounds, however, they seem to have shown inflectional ablaut of the type $-sn-u$ / $sn-eu$ -, $-gn-u$ / $-gn-eu$ - with nothing but zero grade root: RV masc. sg. nom. $ghṛtá-snu-h$ 'butter-backed', voc. $-sno$; dual voc. $-snū$; pl. nom. $mitá-jñav-aḥ$ 'steady-kneed' inst. $-jñu-bhih$; Av. fem. gen. sg. $fra-šnao-š$ 'with projecting knees'; RV fem. acc. pl. $ghṛtá-snūh$; RV neut. nom.-acc. sg. $abhi-jñú$ 'with bent knee(s)' (adverbialized); Gk. $\acute{\alpha}\nu\tau\iota-\kappa\rho\acute{\upsilon}$ 'opposite' (if this is a bahuvrihi with $koru$ —§ 26.10.2) and perhaps $\pi\rho\acute{o}\chi\nu\upsilon$ 'kneeling' (if this is ultimately a bahuvrihi with $gonu$ —Appendix II).

In principle, a distinction of this sort in the inflectional apophony of a nominal stem between simplex and compound is no different from that of other subtypes— $per-u$ / $-uen$ -¹²³ (Gk. $\pi\epsilon\iota\rho\alpha\rho$ 'end', RV $páruṛ$, $páruvan$ - 'joint') : $-per-u(\acute{o})n$ - ($\acute{\alpha}\pi\epsilon\iota\rho\omega\nu$); $men-o/es$ - ($\mu\acute{\epsilon}\nu\omicron\varsigma$ 'intent', RV $mánaḥ$ 'id') : $-men-ēs$ - ($\acute{\epsilon}\nu\text{-}\mu\epsilon\nu\acute{\eta}\varsigma$, $su-mánaḥ$ 'benevolent'); $ph_2-t(\acute{e})r$ - ($\pi\alpha\tau\acute{\eta}\rho$ 'father' etc.) : $-ph_2-t(\acute{o})r$ - ($\acute{o}\mu\omicron\text{-}\pi\acute{\alpha}\tau\omega\rho$, OP $hama-pitā$ 'having the same father') etc.

26.10.4 The result of these considerations is that if $epi-\acute{k}r-h_2$ 'head-on' is reasonably old, its (adverbialized) nom.-acc., reflected by $\acute{\epsilon}\pi\iota\kappa\alpha\rho$, not only could, but actually should differ in its apophonic shape from that of the simplex. Forssman's morphological objections to identifying $καρ$ with $κάρ\alpha$ thus lose their force. For the assumption of a possessive compound in $\acute{\epsilon}\pi\iota\kappa\alpha\rho$ makes it unnecessary to justify a $*καρ$ as a second nom.-acc. of the simplex $\acute{k}r-(e)h_2$ - 'head' at all. We no more need a

¹²² Schindler, *BSL* 70, 7.

¹²³ For the reconstruction of an original proterokinetic paradigm for $-u$ / $-uen$ -stems cf. Schindler, *BSL* 70, 9f.

* $\kappa\alpha\varrho$ 'head' beside $\kappa\acute{\alpha}\varrho\bar{\alpha}$ than we need a * $j\tilde{n}u$ 'knee' in Vedic (for *abhi-jñu* etc.) beside *jānu*. The two are on the same level.

26.10.5 One final point concerning this interpretation of $\epsilon\pi\iota\kappa\alpha\varrho$ remains. On the one hand, it is possible to assume that the neuter nom.-acc. of the compound in question had the shape *epi- $\hat{k}r$ - h_2* from the outset, and that this developed to *epi κr* , with loss of h_2 in final position (cf. § 26.6.3 above), and then $\epsilon\pi\iota\kappa\alpha\varrho$. Up to this point we have seen nothing that would enable us to judge the likelihood of this reconstruction of the nom.-acc. itself. It will appear later on (§ 38.4), however, that this structure is perfectly possible. The interpretation of $\epsilon\pi\iota\kappa\alpha\varrho$ just presented, however, need not stand or fall on this point alone. For even though paradigmatic levelling in the Greek heteroclitic simplex $\hat{k}r-(e)h_2$ -/*k \check{r} - h_2 -sn-* cannot easily be invoked (as Forssman showed), the same is not applicable to a compound in which the second member shares its stem formation with one of the stems appearing in the simplex. As a general rule, heteroclitics as second compound members inflect throughout the entire paradigm of the compound with only one of the two stems that appear in the simplex. In the case of primary heteroclitics (basically *r/n* stems), it is almost always the (oblique) *n*-stem that is used in all compound forms¹²⁴ (e.g. $\pi\epsilon\iota\varrho\alpha\varrho$ / $\pi\epsilon\iota\varrho\alpha\tau$: $\acute{\alpha}\pi\epsilon\iota\varrho\omega\nu$ / $\pi\epsilon\iota\varrho\omega\nu$ - as above, RV $\acute{u}dhar$ / $\acute{u}dhan$ - : *an- $\acute{u}dh\acute{a}$* / 'udderless' / *rapśád- $\acute{u}dha$ -bhiḥ* 'with swollen udder' etc.). But "secondary" heteroclitics (§ 7.1, 7.2 above), the category to which Greek $\hat{k}r$ - $\acute{e}h_2$ / $\hat{k}r$ - h_2 -sn- could perfectly well belong, behave less consistently. Even in those cases where a secondary heteroclitic seems to have acquired (or begun to acquire) *n*-stem oblique forms already in the protolanguage, it is not unusual to find the unextended stem (equivalent, in effect, to the nom.-acc. stem of the secondary heteroclitic) in compounds. The oblique *n*-stem of Greek $\omicron\upsilon$ - $\alpha\tau$ - 'ear', for example, is matched by Armenian *u-n*- (*kn*) and Germanic forms of the type Goth. *ausō*. This, however, does not prevent the original *s*-stem (found unextended in the nom.-acc. $\omicron\upsilon\check{\varsigma}$) from being preserved as the second member of Greek compounds like Myc. *a-no-we* 'without handles' (< 'earless'), among others, and Theocr. $\acute{\alpha}\mu\phi\omega\epsilon\varsigma$ 'two-handled' (< 'with an ear on each side'), both neuter nom.-acc. singulars reflecting *-o μh -es* and suggesting animate *-o μh -ēs* / *-o μh -eh-os* etc. (and cf. the Myc. PN *o-tu-wo-we* = *orthuō μh -ēs* / *o-two-we-o* = *orthuō μh -eh-os*).¹²⁵ A similar state of affairs would be possible for any compound having $\hat{k}r-(e)h_2$ - as second member. An

¹²⁴ The Vedic situation is described in W-D 2.1, 91 ff.

entire compound paradigm with this unextended stem could easily have been preserved in Greek for as long a time as such a compound continued to be inflected. The implications of this are worth noting. It means that paradigmatic levelling, although excluded for the simplex, is perfectly possible for the compound of which $\acute{\epsilon}\pi\iota\kappa\alpha\rho$ would be an adverbialized relic. This in turn allows us to explain $\acute{\epsilon}\pi\iota\kappa\alpha\rho$ (if it is a compound) either as the direct reflex of an original nom.-acc. neut. $\acute{\epsilon}\pi\iota-\hat{k}r_h_2$ (as above), or as a newer nom.-acc. extracted from oblique compound forms ($-\kappa\alpha\rho-\omicron\varsigma$, $-\kappa\alpha\rho-(\epsilon)\iota$, etc. < $-\hat{k}r_h_2-\omicron\varsigma$, $-\hat{k}r_h_2-(\epsilon)\iota$ etc.). The second possibility would make the admissibility of a phonological development of $-\hat{k}r_h_2$ to $-\kappa\alpha\rho$ irrelevant. Naturally, these two different accounts of $-\kappa\alpha\rho$ (as the second member of a bahuvrihi) may both turn out to be possible. But a final choice between them depends on ascertaining what type of inflectional ablaut this compound would have had, and this itself depends on the original inflection of $\hat{k}r-(e)h_2$ - 'head'. These questions will be taken up later on.

26.11.1 To summarize the possibilities in the case of $\acute{\epsilon}\pi\iota\kappa\alpha\rho$ in particular, it would appear that the $\kappa\alpha\rho$ cannot be an alternate nom.-acc. (§ 26.5). Neither can it be supposed that $\kappa\alpha\rho$ directly continues the endingless locative of a simplex meaning 'head' (§§ 26.6.2 ff.). Even so, there is more than one way of meeting Forssman's objections (§ 26.4) while giving a plausible account both of $\acute{\epsilon}\pi\iota\kappa\alpha\rho$ and a few other adverbial expressions ($\acute{\alpha}\nu\tau\iota\kappa\rho\upsilon(\varsigma)$, $\acute{\epsilon}\gamma\gamma\acute{\upsilon}(\varsigma)$, $\pi\rho\acute{\omicron}\chi\nu$) that consist of a preposition plus a substantive. On the one hand, $\acute{\epsilon}\pi\iota\kappa\alpha\rho$ could reflect a PIE phrase that contained an adverbial $\acute{\epsilon}\pi\iota$ plus $\hat{k}r\acute{e}h_2$, the endingless locative of the word for 'head' seen in $\acute{\kappa}\acute{\alpha}\rho\alpha$ (§ 26.8.4). One would then assume that the phrase underwent early univerbation and subsequent reduction to $\acute{\epsilon}\pi\iota\hat{k}r_h_2$ (§ 26.8.1). If so, $\acute{\epsilon}\gamma\gamma\acute{\upsilon}-$ (§ 26.8.2) and possibly $\acute{\alpha}\nu\tau\iota\kappa\rho\upsilon\varsigma$ (§ 26.8.3) could be parallels in Greek itself. It is also possible that $\pi\rho\acute{\omicron}\chi\nu$ is the result of a development of this kind (Appendix II).

But $\acute{\epsilon}\pi\iota\kappa\alpha\rho$ can also reasonably be taken to be the adverbialized nom.-acc. of a bahuvrihi that has $\acute{\epsilon}\pi\iota$ in a strictly adverbial function as its first member (§§ 26.10.1 f.). This alternative explanation could be

¹²⁵ Cf. Chantraine *DELG*, 839 with references to Szemerényi, *SMEA* 3, 59 ff.; Heubeck, *SMEA* 4, 36; Chadwick-Baumbach, *Glotta* 41, 230.

Naturally, it is also possible to find cases in which a "secondary heteroclitlic" (§§ 7.1, 19.1 f.) appears as an *n*-stem second compound member—e.g. RV *an-asthán-* (beside *an-asthá-*) : *ásthi/asthn-* (W-D 2.1, 93). The model of the primary heteroclitics was always available.

paralleled by admissible alternative analyses of ἀντικρού (§ 26.10.2) and, possibly, πρόχυν (Appendix II) in Greek, and a case like Vedic *abhijñú* elsewhere (§§ 26.10.1, 26.10.2).

The essential point for our purposes, however, is that ἐπικαῶ need not contain a nom.-acc. καῶ in order to be identified, in stem, with κάρα. And since this identification provides the most straightforward interpretation (see Appendix I), we may accept it. Whether it reflects a univibration or an adverbialized possessive compound is less crucial.

26.11.2 If a choice between two possibilities must be made, however, one might prefer to take ἐπικαῶ as a univibration of epikrēh_2 (> epikrēh_2). There are two reasons for this. The less compelling one is that if ἐπικαῶ, ἀντικρού(ς), ἐγγύ-, and πρόχυν are all to be interpreted in exactly the same way, they must all be univibrations, since ἐγγύ- is very unlikely to be a bahuvrihi. More importantly, we would be justifiably reluctant to dissociate (ἐπι)καῶ 'head-on' from Hitt. (*kit*)*kar* 'at the head' (§§ 28.4 f.), which has a locative -*kar* (and cf. §§ 26.8.6, 28.5.3).

27. The compounds ἵγκρος (with $-\hat{k}r(h_2)-o-$) and ἐπικαῶ (with $-\hat{k}r(h_2)$) are not the only Greek compounds that have $\hat{k}r-(e)h_2$ - 'head' as second members. But they are the only ones that are sure to represent something archaic and provide information that could not be gotten from the simplex κάρᾱ itself. Mycenaean *qo-u-ka-ra* (= $g^{\#}ou-k(a)rā$), either a possessive 'cow-headed' or a determinative 'cow head' has already been mentioned (§ 19.4). But the Mycenaean spelling conventions make it impossible to tell whether the word was a di-syllabic $g^{\#}ou-krā$ (which would be one more piece of evidence in favor of seeing a syllabic Lindeman variant in the simplex κάρᾱ: § 21) or a tri-syllabic $g^{\#}ou-karā$. The latter would merely represent the introduction of the simplex into a compound. This is in any case what has happened in κατωκάρᾱ 'head downwards' (Pi., Ar. +), the adverbialization of a relatively recent bahuvrihi.

28.1 In the case of Greek *kerā* 'horn (material)' < $\hat{k}er-eh_2$ (§§ 12.1 ff.), it happened that there was comparative evidence in Hittite (*karāmar*-§ 11) for a $\hat{k}r-eh_2$ - with a meaning something like 'horn'. In the last several paragraphs (§§ 17-27) evidence has been presented for a Greek simplex $\hat{k}r-eh_2$ - 'head' that is also found in the shapes $-\hat{k}r(h_2)-o-$ (ἵγκρος) and $-\hat{k}r(h_2)$ (ἐπικαῶ).

In a few other compounds (κρή-δεμνον etc.), it is unclear whether the first member reflects $\hat{k}r-eh_2$ - or $\hat{k}r-h_2$ -. Here too there is evidence

outside Greek for (or at least consistent with) a stem $\hat{k}r-(e)h_2$ - that has the meaning 'head'. We may leave aside for now the more complex formations. Indo-Iranian and Hittite show traces of a $\hat{k}r-(e)h_2$ - 'head' as such.

28.2 The Indic evidence, though indirect, certainly deserves to be mentioned. Several Indo-Aryan languages¹²⁶ point to an Indic $*\acute{s}rāya$ - 'head'. This formation is not found in Sanskrit itself, but it is impossible to see how it could have been formed at any relatively late date from anything known in older Indic. Morphologically, the form is clear enough up to a certain point. The $\acute{s}rā$ - would seem to reflect $\hat{k}r-\acute{e}h_2$ - and thus correspond to $\kappa(\acute{\alpha})\rho\acute{\alpha}$, if not necessarily to $\kappa\rho\acute{\eta}$ -($\delta\epsilon\mu\nu\nu$ etc.) as well. The analysis of the $-ya$ - that follows this $\acute{s}rā$ - is more difficult. Since exocentric ("genitival") $-iya$ - (cf. § 13.2) is ruled out phonologically in $*\acute{s}rāya$ -, the pair $\kappa\acute{\alpha}\rho\acute{\alpha}$: $\acute{s}rā-ya$ - cannot be paralleled by the (rather frequent) pattern displayed by, e.g. Gk. $\kappa\eta\rho$ etc. 'heart' ($\acute{k}ērd$) : $\kappa\alpha\rho\delta\acute{\iota}\alpha$ / OIr. *crīde* 'id.' ($\acute{k}y\acute{d}-i\acute{\alpha}-/-i\acute{\alpha}-$) etc., where the substantivized adjectival derivative finally comes to be synonymous with its derivational basis. On the other hand, the status of an inherited nominal suffix $-i\acute{o}$ - is precarious.¹²⁷ But it may be noted that if Greek (Hom. +) has $\pi\epsilon\zeta\acute{o}\varsigma$ 'on foot' (< $pedi\acute{o}$ - : $pod-/ped$ - 'foot'), it might be possible to take Indic $*\acute{s}rāya$ - as ultimately reflecting a $\acute{k}reh_2i\acute{o}$ - 'in the head', and assume that this was substantivized to something like 'skull', whence 'head' by a trivial semantic generalization.

In any case, there is a practically perfect complementary distribution between those Indo-Aryan languages that have reflexes of $*\acute{s}rāya$ - and those whose word for 'head' comes from $\acute{s}iras$ -.¹²⁸ This makes it possible to suppose that the absence of $*\acute{s}rāya$ - from Sanskrit literature is a dialectal matter.

28.3 Old Persian $fra\acute{v}ara$ - 'pre-eminent' has been taken¹²⁹ to reflect a compound whose second member $-\acute{v}ar-(a)$ - would correspond to Greek $-\kappa\alpha\rho$ 'head'. More precisely (since it is not clear whether $-\kappa\alpha\rho$ is really a compound member as such—§§ 26.7 ff.), one could in fact

¹²⁶ Turner *CDI-AL*, entry no. 12694.

¹²⁷ Seebold (*Idg. Halbvokale*, 243 ff.; summary 277) operates with exocentric $-i\acute{o}$ - vs. endocentric $-i\acute{o}$ -. Evidence for a unitary, purely denominative $-i\acute{o}$ - is thin at the very least (and cf. addendum to § 38.1).

¹²⁸ Only Katei (Kafiri) has both. But there the $\acute{s}iras$ -reflex is found only in hymnic literature, according to Turner (*CDI-AL*, entry 12452), not in the spoken language.

¹²⁹ W. Wüst, *Altpersische Studien* (= PHMA 8–11), 207 f.

suppose an Iranian bahuvrihi *fra-śar-a*- 'prominent-(headed)'. In favor of this suggestion is that it avoids the unlikely assumption of a comparative *-thara*- (beside normal *-tara*-) that would be required by the view that *fraθara*- is somehow the same as OP *fratara*- 'prior'.¹³⁰ Similarly, it seems an improvement on the analysis *fraθ-ara*- and the identification¹³¹ of this with RV *práth-ate* 'spreads', Av. *fraθ-ah*- 'breadth' etc., which is semantically unconvincing and morphologically not quite straightforward. If this suggestion is accepted, the second member *-śara*- thus furnished may be compared exactly only to that of the Greek governing compound ἵγκρος 'brain' (< $\hat{k}r(h_2)$ -o -§§ 25.2 f.). The analysis *prokēh₂-o*- for the OP form might come to mind first of all. On Avestan *sāra*- 'head' see below (§ 33).

28.4 Another relevant form is a Hittite *-kar* '(to/at) the head', found only in the expression *kitkar/kitkarza* '(here) at/to the head'. There have been two recent extensive discussions of the form,¹³² and in some respects its precise historical interpretation is controversial. Several points, however, have become *communis opinio*:

1) Since Old Hittite has only *kitkar*, this is to be considered the original form, while *kitkarza* shows the relatively recent addition of the ablative ending.

2) The segmentation is *kit-kar*, and *kit*- is identical to the *kēt* that occurs as a free form with a meaning something like 'here', and ultimately represents a case form of the pronominal stem *kā*-.¹³³

3) The expression *kit-kar* '(here) at the head' was originally two independent juxtaposed words that have become a single adverb. Hittite therefore once had a simplex *kar* that functioned as a locative.

4) Etymologically, *kar* is to be referred to Gk. *κάρα* etc. In previous discussions, it has been compared especially closely to (ἐπι-)καρ.

To points 1 and 2 there is nothing to add. Both seem indisputable. As to point 3, however, it is not really clear that *kit-kar* unconditionally

¹³⁰ Kent *OP*, 198 with further reference.

¹³¹ Brandenstein-Mayrhofer *Handbuch*, 120.

¹³² Neu *Lok*, 20 ff.; Melchert *Inst and Abl*, 199 ff., 259 ff.; both with references to earlier literature.

¹³³ According to Melchert, *ket* is an instrumental filling in for ablative (as often happens in the Old Hitt. pronominal system)—and specifically for a "directional" ablative. For Neu, *ket* is an endless locative of the pronominal stem that has a *-t* "extension" but no actual desinence.

requires us to attribute a free form *kar* with locative function to any stage of Hittite. And point 4 makes this even less clear. For an especially close comparison of (*kit-*)*kar* with (ἐπι-)καρ naturally suggests exploring the possibility of giving them parallel interpretations. And for (ἐπι-)καρ, a free form καρ (in no matter what function) is implausible (§§ 26.4–26.6). Although an identity of stem formation between Hitt. -*kar* and Gk. -καρ (plus κάρα etc.) is certainly to be retained (from point 4), it remains to be seen whether or not it is desirable to dissociate Hitt. -*kar* from its apparent Greek correspondent by viewing it, as it stands, as some case form of a simplex paradigm.

28.5.1 As already argued above (§ 26.6.2), the reconstruction of an inherited endingless locative $\hat{k}r$ can be ruled out both because a root noun $\hat{k}(e)r-$ is unsupported and because, even so, its endingless locative ought not to have had zero grade.

But there is still room for more than one account of a Hittite *kar* as a free form with locative function. In the case of the Greek simplex κάρα / καρᾶατ-, it was possible to exclude a simplex endingless locative καρ (§ 26.6.3) because such a form would pre-suppose paradigmatic levelling there, and this is risky at the very least in a paradigm that may well have acquired a heteroclitic oblique stem very early (§ 26.5). In the Hittite situation, however, we lack the evidence on which to make a decisive similar argument, since there is no positive indication of an oblique reflecting $\hat{k}rh_2s(e)n-$ there. One is free to consider the possibility that the relatively early innovation(s) responsible for the creation of Gk. καρᾶατ- (and perhaps also for its correspondence to Ved. $\hat{s}ir\hat{s}n-$) never occurred at all in pre-Anatolian. This would permit one to suppose that Anatolian (or even Hittite itself) had, for a time, a paradigm of 'head' based entirely on $\hat{k}r-(e)h_2-$ inflected with ablaut, and that paradigmatic levelling (generalization of $\hat{k}rh_2-$) produced a locative $\hat{k}rh_2$, which developed regularly to Hittite **karh* and then *kar*, the only form in this paradigm to be preserved. The final point to be made concerning the admissibility of *kar* as a simplex Hittite locative is that as far as the phonology goes, it could reflect $\hat{k}er-h_2$ ¹³⁴ as well as $\hat{k}r-h_2$. But this structure (*e*-grade root plus zero suffix) cannot have characterized the original endingless locative of the *h*₂-stem for 'head' (§ 26.8.4). And seeing a locative $\hat{k}er-h_2$ as the product of paradigmatic levelling is probably excluded (cf. § 35 below).

¹³⁴ Insofar as *erC* > Hitt. *arC* (e.g. Kronasser *Etym*, 25 and *VLFH*, 38).

28.5.2 A second possibility altogether is that of following the suggestion of C. Melchert,¹³⁵ who takes *kar* 'at the head' to be not an original morphological locative, but a neuter nom.-acc. that has taken on locative function and is preserved exclusively in that function. He compares the neuter nom.-acc. *lammar* 'hour', which also has an adverbial function (*lammar* 'at once'), and is found in the clearly locative expression *lammar lammar* 'hourly'. [*] A nom.-acc. $\hat{k}rh_2$ (once again with paradigmatic levelling) could therefore also be considered. But a nom.-acc. $\hat{k}erh_2$ (as opposed to the Gk. nom.-acc. $\hat{k}r-\acute{e}h_2$), though phonologically possible, would be unacceptable on other grounds (§§ 26.8.4, 35).

28.5.3 It is therefore possible to see in Hitt. (*kit-*)*kar* a *kar* (< $\hat{k}rh_2$) that represents either a nom.-acc. or a locative of $\hat{k}r-(e)h_2$ - 'head' ($\kappa\acute{\alpha}\rho\alpha$), and that existed as a free form in Hittite before being joined with pronominal *kit-*. The paradigm to which *kar* belonged at the time would have subsequently disappeared. But the existence of an isolated *-kar* with locative function beside the isolated *-kar* with directive function in Greek (neither of which belong to any paradigm synchronically) disfavors both of these analyses of Hitt. *-kar*, since Gk. $-\kappa\alpha\rho$ cannot be taken as a free form of either kind (§§ 26.5, 26.6.4). The Greek form could either be the second member of a bahuvrihi or the second half of a "univerbation". But seeing an inherited bahuvrihi $X-\hat{k}rh_2$ as the ultimate source of *kit-kar* would be problematical in several respects, and it is therefore preferable to suppose that $\hat{k}r\acute{e}h_2$, the original endingless locative of 'head', became involved very early in one (*epi-k $\hat{r}e\acute{h}_2$* itself?) or more "univerbated" adverbial expressions, and was reduced to $-\hat{k}rh_2$ (cf. $-\acute{g}hsri$, $-gu$ § 26.8.1 f.) already in PIE. Hittite would then have substituted *kit-* for whatever "first member(s)" it inherited, a development paralleled, for example, by the creation of $\mu\epsilon(\sigma)\sigma\eta-\gamma\acute{\upsilon}(\varsigma)$ on the basis of $\acute{e}\gamma-\gamma\acute{\upsilon}(\varsigma)$ in Greek.

It seems important enough to repeat (cf. § 26.8.6), however, that this interpretation of (*kit*)*kar* = ($\acute{e}\pi\iota$) $\kappa\alpha\rho$ requires, for the stage at which the univerbation $X + \text{loc. } \hat{k}r-\acute{e}h_2$ (> $-\hat{k}rh_2$) was formed, a paradigm of 'head' that had the simple h_2 -stem throughout. But if we wish to leave open the possibility that the heteroclitc paradigm seen in Gk. $\kappa\acute{\alpha}\rho\alpha / \kappa\alpha\alpha\tau-$ results from essentially the same development that lies behind the Ved. paradigm $\acute{s}íras / \acute{s}íṛṣṇ-$ (§§ 9.8 no. 4, 26.5, 26.8.6), we must suppose that the correspondence of $\kappa\alpha\alpha\tau-$ to $\acute{s}íṛṣṇ-$ is the consequence of an early innovation that *followed* the univerbation of the

¹³⁵ Melchert *Abl and Inst*, 201.

$X + \text{loc. } \hat{k}r-\check{e}h_2$ in question. There seems to be no obstacle at the moment, since it does not require Greek ever to have had a paradigm based entirely on an h_2 -stem, but only an isolated, adverbialized relic of such a paradigm.

29.1 The evidence for a stem $\hat{k}r-(e)h_2$ - that has no further suffixes and means 'head' has now been surveyed, and the various forms that belong under this heading have each been classified from a historical point of view (original simplex forms vs. original compound forms, possible reconstructions of particular items, original case functions of some forms, etc.: §§ 17–28). In part IIc just below (§§ 30 ff.), the major problem raised by the interpretations offered in IIa and IIb will be discussed. This is the relationship between simple $\hat{k}(e)r-(e)h_2$ - 'horn (material)', indicated jointly by Greek and Hittite, and simple $\hat{k}r-(e)h_2$ - 'head', also indicated by Greek and Hittite directly, and probably supported by an Indic derivative $*\acute{s}rā\text{-}ya$ -. First, however, there are a few points concerning the segmentation of $\hat{k}r-(e)h_2$ - 'head' that ought to be made explicit.

Among the forms that mean 'horn' in some way, the segmentation $\hat{k}(e)r-(e)h_2$ - (with suffixal $-(e)h_2$ -) for the stem reflected by Myc. $\acute{k}erā$ and Hitt. $\acute{k}arā(\underline{u}ar)$ was unavoidable (§§ 11.1, 15): On the one hand, it is out of the question to suppose that Myc. $\acute{k}erā$ and Hitt. $\acute{k}arā(\underline{u}ar)$ are not made on the same root as $\hat{k}or\text{-}u$ - and $\hat{k}(e)r\text{-}n(o)$ -. But at the same time, no unambiguous form of the u - or n -stem group shows $-(e)h_2$ - after the root. Furthermore, the available evidence suggests a semantic distinction between $\hat{k}(e)r-(e)h_2$ - 'horn (material)' and the others (which originally seem to have named the object only). Finally, the analysis $\hat{k}(e)r\text{-}e\text{-}h_2$ for 'horn (material)' is excluded by Greek $\acute{\kappa}\epsilon\rho\alpha\varsigma$ (§§ 40 ff. below). [*]

Following the traditional view that all the forms in this entire 'horn'/'head' group have one and the same root, the segmentation $\hat{k}r-(e)h_2$ - has appeared throughout in §§ 17–28 for the 'head' words discussed there. Explicit mention of the theoretical alternatives has been postponed until now:

1) $\hat{k}r\text{-}e\text{-}h_2$ is phonologically possible for $\acute{\kappa}\alpha\rho\acute{\alpha}$ and $\acute{\kappa}\rho\eta\text{-}/\acute{\kappa}\rho\acute{\alpha}$ - but is objectionable from every other point of view: it makes the neuter gender of singular $\acute{\kappa}\alpha\rho\acute{\alpha}$ highly problematical, prohibits the reconstruction of a single formation to account for $\acute{\kappa}\alpha\rho\acute{\alpha}$, $(\acute{\epsilon}\pi\iota)\text{-}\acute{\kappa}\alpha\rho$, Indic $*\acute{s}rā\text{-}ya$ - and Hitt. $(\acute{k}it)\acute{k}ar$ all at the same time, and is ruled out in any case by

the more complex formations to be taken up below (e.g. $\hat{k}r\text{-}h_2\text{-}sn\text{-}$ in Greek, Indic and elsewhere).

2) We are therefore left with a choice between the $\hat{k}r\text{-}(e)h_2$ - with which we have been operating and a neuter root noun $\hat{k}r(\check{e})h_2$ - 'head' reflecting a root ($\hat{k}reh_2$ -) that is different from the one ($\hat{k}er$ -) that underlies all of the 'horn' formations. Seeing such a root noun here is not only a radical solution, but also results in an uneconomical multiplication of reconstructed items and amounts to the adoption of a null hypothesis unless there is no alternative. Methodologically, a neuter root noun $\hat{k}r(\check{e})h_2$ - should remain a last resort.

29.2 The situation so far, in schematic form, would appear as follows if the various allomorphs that are found are arranged according to what they actually mean:

'horn (object)' ¹³⁶	'horn (object)'	'horn (material)' II a.	'head' II b.
$\hat{k}or\text{-}u$	$\hat{k}(e)r\text{-}n(o)\text{-}$ § 7	$\hat{k}er\text{-}eh_2\text{-}$ $\hat{k}r\text{-}eh_2\text{-}$	$\hat{k}r\text{-}eh_2\text{-}$ $\hat{k}r\text{-}h_2\text{-}$
$\hat{k}(e)r\text{-}u$ § 8			
$\hat{k}r\text{-}om$			
SCr. <i>krāva</i> etc.	Gk. κέρα(ι)	Myc. <i>kerā</i> Hitt.	Gk. κάρα Hitt.
L. <i>ceruos</i> etc.	L. <i>cornum</i> / <i>-u</i>	<i>kerajo-</i> <i>karā(ūar)</i>	Indic (<i>kit</i>)- <i>kar</i>
Av. <i>sruu(ā)</i> -	OHG <i>hrin-d</i>		* <i>śrāya-</i> Gk.
Gk. δί-κρο(F)-ος	etc.		ἐπι-κρο
			ἵγ-κρο-ος
			ἔγ-κρο-ος
			OP
			<i>fra-θar-a-</i>

The Greek first compound member κρο̄-/κροη- 'head' belongs with κάρα, (*kit*)-*kar* etc., but is ambiguous between $\hat{k}r\text{-}eh_2$ - and $\hat{k}r\text{-}h_2$ -. Furthermore, this arrangement is intended as a purely descriptive one, and

¹³⁶ At first sight, the Avestan dual forms of *sruu(ā)*- (§§ 3.2, 8.4) that mean 'the two sets of nails' (cf. Bartholomae *AirW*, 1647) might be taken to suggest that the apparent underlying *śruu-eH-*/*śru-H-* actually meant 'set of horns, talons, nails' (but see § 8.4). If this collective function is attributed not to the $-(e)H\text{-}$ (< $-(e)h_2\text{-}$) suffix, but to the *u*-stem itself, one would have an explanation for the observation that most of the $\hat{k}er\text{-}u$ -/ $\hat{k}r\text{-}u$ - derivatives (Latin *ceruos*, Welsh *carw*, OPr *sirwis* etc.—cf. also OHG *hiruz* etc.) do happen to name animals that have sets of horns—i.e. antlers. But it does not really seem attractive on further reflection to suppose that the *u*-stem in question meant 'set of horns'. The Av. dual can also mean simply 'two horns', and there would be no reason not to attribute the collective function to the $-(e)h_2$ -suffix in the first place. In addition, the *u*-stem does not have collective value in Gk. δί-κροF-o- 'two-horned' (§§ 3.3, 8.2), and one of its derivatives (B-S *kōryā* § 4.4.1) means 'cow'.

although the forms placed together under $\hat{k}r-h_2$ - 'head', for example, all do in fact seem to reflect this, the zero grade seen in Hitt. (*kit*)-*kar* and Gk. (ἐπι)-καρ probably has an origin that is to be distinguished (on some level) from that of the others (§§ 26, 28.4 f.). And in any case, only indirect conclusions concerning the original paradigm of any of these items may be drawn from the co-existence of the various stem shapes.

What emerges from this arrangement of the material, however, is that a meaning 'horn', from one point of view or another, is the basic one to a certain extent. It is universal in the *u*- and *n*-stem groups, and even among the h_2 -stems (to which the 'head' words are completely confined) 'horn' appears as well.

II c. $\hat{k}ér-h_2$ 'head-bone (substance)' →
 $\hat{k}r-é\hat{h}_2$ 'skull' > 'head'

30.1 The material considered in II a. and II b. presents us with a situation that is easily summarized. Descriptively, we have reflexes in the individual languages of a $\hat{k}(e)r-eh_2$ - 'horn (material)' beside reflexes of a $\hat{k}r-(e)h_2$ - 'head'. The problem is that of ascertaining the PIE state of affairs that lay behind this.

There are only two logical possibilities, and each of them suggests further questions. On the one hand, we may think of tracing all the reflexes in question back to a single substantive in the protolanguage. In that case, our task is now to reconstruct a PIE h_2 -stem in as much detail as possible (derivational history, inflectional type, gender), and to reconstruct a meaning for it, in such a way that it is possible to eliminate the various difficulties:

- 1) semantic ('horn' vs. 'head' for the same substantive in both Greek $kerā/κῆρα$ and Hittite $karā(yar)/(kit)kar$)
- 2) morphological (e.g. $κῆρα/κῆραατ$ - vs. apparent $kerā/kerās$ in Gk.)
- 3) gender (neuter $κῆρα$ vs. apparent feminine $kerā$ in Gk.)

On the other hand, one could take the descriptive situation at face value and reconstruct two PIE lexical items—two synchronically distinct paradigms—each with its own meaning, its own gender, its own inflectional characteristics; but both formed with the root $\hat{k}(e)r$ - and the suffix $-(e)h_2$ -. In this case, there is the problem of explaining how two paradigms whose stem formation is superficially identical could have existed side by side (and could have had two different meanings and inflections and genders) in the protolanguage. Furthermore, such an explanation will have to account for the two separate items simultaneously. Naturally, they cannot be viewed as entirely independent.

30.2 We may first look into the possibility of reconstructing one PIE lexical item $\hat{k}(e)r-(e)h_2$ - as the source of all the reflexes in question. And since there are two different meanings represented among

them, it would be well to begin with the question of what this substantive might have meant originally.

At least one secure-looking conclusion may be drawn immediately. A substantive found with the root $\hat{k}(e)r-$ and the suffix $-(e)h_2-$ existed already in PIE, and (whatever else it may or may not have meant), this substantive meant 'head'. The Greek evidence all by itself would point in this direction, for the alternations $\acute{\alpha}\rho\alpha : \kappa\rho\tilde{\alpha} : (\acute{\iota}\gamma)\kappa\rho\sigma : (\tilde{\alpha})\kappa\rho\sigma : (\tilde{\epsilon}\pi\iota)\kappa\rho$ cannot have arisen within the history of Greek. Potential models—even hypothetical ones—are entirely lacking. Such alternants can only be viewed as the outcomes of pre-forms that not only contained h_2 as a viable consonant, but were subject to phonological (e.g. Lindeman's Law) and morphological (e.g. compositional apophony) processes that would certainly have ceased to be automatic in this set of forms at a very early stage in the history of Greek.

Significantly, however, most of these isolated allomorphs, necessarily produced by archaic processes, have exact parallels elsewhere. Perhaps most striking is the practically inevitable equation between Gk. locative $-\kappa\rho$ (in directive function) and Hittite locative $-kar$, both implying not only a PIE locative $\hat{k}reh_2$, but much more specifically the formation in PIE of one or more expressions in which this locative, once "univerbated" with a preceding adverbial element, underwent early reduction to $-\hat{k}rh_2$ (§ 26.11). Similarly, even if $\acute{\epsilon}\gamma\kappa\rho\sigma$ 'brain' is not necessarily the direct reflex of a $-\hat{k}rh_2-o-$ that probably also lies behind OP $fra-\thetaara-$ 'prominent' (§ 28.3), either $\acute{\iota}\gamma\kappa\rho\sigma$ or $\tilde{\alpha}\kappa\rho\sigma$ most likely is. And Indic $*\acute{s}rāya-$ 'head', which is presumably distinct from $\acute{\alpha}\rho\alpha$ only in its expectable non-syllabic r , could therefore have precisely the same pre-form as Gk. $\kappa\rho\tilde{\alpha}$ in compounds. The other possibility is that compositional $\kappa\rho\tilde{\alpha}$ reflects $\hat{k}rh_2-$ and thus provides a different archaic alternant of $\acute{\alpha}\rho\alpha$ ($\hat{k}rh_2- : \hat{k}rh_2\tilde{e}h_2$).

In other words, it is only by reconstructing PIE pre-forms and allowing them to undergo early processes that these forms can be sensibly aligned with one another. And yet the meaning 'head' is pre-supposed for the forms aligned in this way. If the meaning 'head' for $\acute{\alpha}\rho\alpha$ were the result of a post-PIE semantic change of any sort, one would have to suppose that the $\hat{k}ér-eh_2-$ of Indic $*\acute{s}rāya-$ coincidentally underwent a similar change. The meaning 'head' both for the second member of $\acute{\iota}\gamma\kappa\rho\sigma$ (and/or $\tilde{\alpha}\kappa\rho\sigma$) and for OP $fra-\thetaara-$ would then also result from a coincidental convergence. Surely it is much more plausible to suppose that the substantive that was subjected to the early processes observable in the reflexes already meant 'head' when those processes

came into play. Most clearly of all, it would seem that the exact semantic and special apophonic correspondence of the Greek locative ($\hat{\epsilon}\pi\iota$) $\kappa\alpha\theta$ and the Hittite locative ($\hat{k}it$) $\bar{k}ar$ demands a PIE substantive $\hat{k}r-(e)h_2-$ that itself meant 'head'.

30.3 If so, there has been some progress made, since the possibilities for an overall solution have been somewhat delimited. We may, for example, confidently rule out a PIE $\hat{k}(e)r-(e)h_2-$ meaning 'top of the body' that would have been divergently specialized to words for 'head' and 'horn' (or both) only within the histories of the individual IE languages. Since a h_2 -stem substantive on the root $\hat{k}(e)r-$ was present in the protolanguage and had the meaning 'head', we may trace all of the $\hat{k}(e)r-(e)h_2-$ reflexes back to one and the same PIE paradigm only if

1) the word with this paradigm meant 'head' in PIE, but took on a secondary or extended meaning both in Gk. ($\bar{k}er\bar{\alpha}$) and in Hittite ($\bar{k}ar\bar{\alpha}-\bar{u}ar$), while keeping the primary one as well (Gk. $\kappa\acute{\alpha}\rho\alpha$, Hitt. $-\bar{k}ar$) or

2) the PIE word in question simply meant 'head and/or horn' indiscriminately already in the protolanguage.

Neither of these suppositions is at all attractive. In the first place, both can be considered circular. They are supported by nothing but the observation that the forms pointing to a $\hat{k}(e)r-(e)h_2-$ partly mean 'head' and partly 'horn'. But neither reconstruction explains anything beyond the very observation on which they are based. Neither proposal, for example, contributes anything automatic toward the problem posed by the distinction between Myc. dat. (-inst.) $\bar{k}er\bar{\alpha}i$ and Hom. dat. $\kappa\acute{\alpha}\rho\alpha\tau\iota$.

In addition (cf. no. 1 above), if a word for 'head' has also come to mean 'horn' somehow both in Hittite and Greek, we have a unique semantic development twice over. No IE language shows any tendency to give a basic 'head' term the additional meaning 'horn'—not to speak of 'horn (material)' more specifically (Gk. $\bar{k}er\bar{\alpha}$). Nor do Greek and Hittite themselves (cf. $\kappa\epsilon\phi\alpha\lambda\acute{\eta}$, $\bar{h}ar\check{s}ar-$ respectively).

As a corollary (cf. no. 2), therefore, there is no IE language that uses the same word for both. For PIE itself, the exceptionless restriction of all the $\hat{k}eru-$ and $\hat{k}(e)rn(o)-$ reflexes to the meaning 'horn' certainly indicates that 'head' and 'horn' are very unlikely to have been thought of as basically the same thing at that stage either.

An argument specifically against a PIE h_2 -stem meaning 'head' (no. 1) that comes to be used as a word for 'horn' only secondarily (at

no matter what stage) has to do with a point made earlier (§ 29.2), where it was noted that a meaning 'horn' from one point of view or another seems persistent within the entire group of formations with the root $\hat{k}(e)r-$ in common. A distinction between the object ($\hat{k}or-u-/ \hat{k}(e)r-n(o)-$) and the substance ($\hat{k}(e)r-(e)h_2-$ with the collective suffix) seems sensible and realistic. But if so, the meaning 'head' for $\hat{k}(e)r-(e)h_2-$ (probably already PIE) is something to be explained rather than assumed as the starting point.

30.4 The drawbacks on semantic grounds to a $\hat{k}(e)r-(e)h_2-$ 'head and/or horn' (cf. again § 30.3 no.2) become still more pronounced when the reconstruction of a single stem with twin meanings is combined with certain other assumptions concerning the more complex formations that belong here and will have to be dealt with eventually (cf. §§ 9.2 ff., III a, b, c). These assumptions would have it that $\hat{k}(e)r-(e)h_2-$ 'head and/or horn' has a derivative $\hat{k}(e)r-h_2-(e)s-$ (κέρας 'horn', Skt. *śiras-* 'head') and that this, in turn, has a derivative $\hat{k}r-h_2-s- r/n-$ (e.g. Gk. ὀρθό-κραια 'straight-horned' / κῥᾱτ- 'head').

We now must accept a semantic ('horn' vs. 'head') split not only for $\hat{k}(e)r-(e)h_2-$ (which also shows a paradigmatic split in Gk. – *kerāi* vs. κράατι), but also for $\hat{k}(e)r-h_2-(e)s-$ (κέρας vs. *śiras-*) and $\hat{k}r-h_2-s- r/n-$ (–κραια 'horned' / κῥᾱτ- 'head') as well. That is, we have one basic formation and two layers of further derivation. And yet none of these three reconstructed substantives seems to have had a specific enough meaning that it did not undergo further semantic specialization in one direction ('horn' for κέρας and –κραια 'horned'), or the other ('head' for *śiras-*, *śīṛṣ(a)n-*, κῥᾱτ-), or even both at once (*kerā* vs. κᾰρα). As already pointed out above, the one thing that we never find in any IE language is a single lexical item (one and the same paradigm) that actually means both 'head' and 'horn'. We must then ask why we are reconstructing precisely this situation for PIE – and in triplicate. On the other hand, a $\hat{k}(e)r-(e)h_2-$ 'head' that simply acquires the meaning 'horn' in Greek and Hittite (§ 30.3 no.1) would not provide any basis for an understanding of the semantic contrast seen in κέρας 'horn' vs. *śiras-* 'head' or –κραια 'horned' vs. κῥᾱτ- 'head' either.

To summarize, it seems certain that PIE had a $\hat{k}(e)r-(e)h_2-$ that meant 'head'. But reconstructing only one substantive with this stem makes it impossible to provide anything but an arbitrary and even dubious account of the meaning(s) of Myc. *kerā* 'horn (material)' and Hitt. *karā(uar)* 'horn'.

31.1 As intimated earlier (§ 30.1), however, the appearance of two meanings among the $\hat{k}(e)r-(e)h_2$ - reflexes is not the only obstacle to a single PIE item with this stem. For as soon as an attempt is made to establish a gender and an inflection for a hypothetical PIE $\hat{k}(e)r-(e)h_2$ - (meaning irrecoverable), certain pieces of evidence, together with what they imply, become irreconcilable with the requirements of other pieces of evidence. We may now look into this more closely.

If all the reflexes of a h_2 -stem that means either 'head' or 'horn' come from only one PIE $\hat{k}(e)r-(e)h_2$ -, then it may be concluded that the paradigm in question had \acute{e} /zero inflectional ablaut in the root (cf. § 15 no. 5). The Greek evidence alone (*kerā*/κῆρᾱ) is sufficient justification for this conclusion. Hittite *karā(yar)* is only a derivative of the hypothetical PIE stem under discussion, but the indications (§§ 10 f.) are that it is a relatively late one in which a *-yar* was added to an *ā*-stem *karā*- with little semantic effect. In any case, this would only provide a parallel for Gk. κῆρᾱ. If there was apophony in the root, however, then there should also have been apophony in the suffix originally, since there seems to be no identifiable PIE pattern of substantival athematic inflection that combines an ablauting root with a fixed \acute{e} -grade suffix (§ 15 no. 5). The evidence of Gk. *kerā*/κῆρᾱ plus Hitt. *karā(yar)* certainly demands an \acute{e} -grade suffix somewhere in the paradigm.

31.2 The ablauting root excludes hysterokinetic inflection for a putative single PIE formation, since this type features a zero-grade root throughout. The assumption of an amphikinetic $\hat{k}\acute{e}r-oh_2/\hat{k}r-h_2$ - loc. $\hat{k}r-\acute{e}h_2$ perhaps cannot be ruled out entirely, but entails serious complications—for example the development in Greek of one paradigm (*kerā*) showing a root vocalism levelled in favor of the nom. and acc. plus a suffix generalized from the locative, and a second stem (κῆρᾱ) which descriptively reflects the original locative but occurs only as a nom.-acc. neuter. Such a hypothesis could be seriously considered only if no more straightforward alternative were available. Another assumption that may be considered unnecessarily complicated is that of seeing the forms in question as arising from an absolutely original acrostatic $\hat{k}\acute{e}r-h_2/\hat{k}\acute{e}r-h_2$ - with a switch of the oblique to $\hat{k}r-eh_2$ -.¹

31.3.1 The first choice, therefore, in reconstructing a single PIE source for the reflexes of $\hat{k}(e)r-(e)h_2$ - would be proterokinetic $\hat{k}\acute{e}r$ -

¹ See Schindler, *BSL* 70, 7 for the view that certain acrostatic paradigms became descriptively proterokinetic.

$h_2 / \hat{k}r-éh_2$ -. As to its gender, one would choose either feminine (projecting back what is highly probable for Gk. *kerā* and the preform of the derivational basis of Hitt. *karā-uar*) or neuter (projecting back the gender of $\kappa\acute{\alpha}\rho\alpha$).

31.3.2 As already suggested (§§ 29.2, 30.3), the apparent semantic contrast between $\hat{k}(e)r-(e)h_2$ - in the meaning 'horn (material)' and $\hat{k}or-u- / \hat{k}(e)r-n(o)$ - 'horn (object)' inclines one to see the h_2 -stem formation as an example of $-(e)h_2$ - in collective function. In addition, a neuter collective h_2 -stem type is perhaps to be attributed to a relatively early stage of the protolanguage (by internal reconstruction of the PIE neuter nom.-acc. plural in $-h_2$; cf. § 37). At first sight, therefore, it might seem at least theoretically possible to suppose that a neuter $\hat{k}ér-h_2 / \hat{k}r-éh_2$ -, inherited into the individual languages, is what lies behind Gk. $\kappa\acute{\alpha}\rho\alpha$ etc. / *kerā*, Hitt. *-kar / karā*- and the other $\hat{k}(e)r-(e)h_2$ - reflexes that mean 'head' or 'horn'.

This will not do, however, on closer examination. The semantic problem (§ 30) would remain untouched, but that is not our present concern. More to the point, it is not likely that this variety of neuter substantive (collectives inflected as singulars with suffixal $-(e)h_2$ - throughout) survived into the individual languages. On the one hand, it is beyond doubt that any such collective neuter substantives with suffix $-h_2$ - plus desinence zero in the nom.-acc. had been reinterpreted, *qua* neuters, as having a nom.-acc. desinence $-h_2$ already in PIE. It is therefore not surprising that singular neuter paradigms with $-(e)h_2$ - as a suffix are a non-existent type for all intents and purposes in the IE languages.² But even if there were no objection to an inherited neuter $\hat{k}ér-h_2 / \hat{k}r-éh_2$ - as such, it would necessitate unacceptable further assumptions. One would have to say that the structure of the nom.-acc. $\kappa\acute{\alpha}\rho\alpha$ (< $\hat{k}r-eh_2$) amounts to the generalization of the stem-shape appropriate originally only to the oblique. But the generalization of feminine-looking $-eh_2$ to the nom.-acc. of a formation that was neuter from the beginning (and remained so) is incomprehensible. Moreover, a point that has been made before (e.g. § 26.5), the equation $\kappa\rho\acute{\alpha}\alpha\tau$: Ved. *śīrṣṇ*- 'head' strongly implies that there was something irregular about the paradigm of this word for 'head' already at some point in the protolanguage. It is therefore not necessarily admissible to invoke levelling within some completely normal paradigm in the first place.

² And $\hat{k}r-(e)h_2$ - 'head' itself (clearest in $\kappa\acute{\alpha}\rho\alpha$) is of course nowhere inflected with $-(e)h_2$ - as the pre-desinential suffix throughout the paradigm (cf. Part III c., §§ 51 ff.).

31.3.3 This leaves us with the possibility of feminine gender for proterokinetic $\hat{k}ér-h_2$ to look into. For a formation with the gender, suffix, structure, and inflection of a fem. $\hat{k}ér-h_2 / \hat{k}r-éh_2$, there is at least a parallel—the PIE word for 'woman' $g^hén-h_2 / g^h_n-éh_2$ - (OIr. *ben / mná* cf. γυνή etc.). It is impossible to say, however, how good a parallel this is derivationally and functionally. Tentative feminine gender need not make us less inclined to see this $\hat{k}ér-h_2$ as a collective. But the $-(e)h_2$ -suffix certainly had other functions too already in PIE, and $g^hén-h_2$ 'woman', whatever its derivational history, is unlikely to be a collective. As a proterokinetic feminine *collective* of the structure *Root* + $(e)h_2$, a $\hat{k}ér-h_2$ would therefore be unique, strictly speaking, although not actually inadmissible on any positive grounds.

However that may be, a proterokinetic $\hat{k}ér-h_2$, even if feminine, is still unsatisfactory as a basis for combining the 'head' (ἄρα etc.) and the 'horn' (Myc. *kerā*, Hitt. *karā-yar*) forms. For the latter, to be sure, there would be no special problem. Notably, it is Gk. ἄρα that remains intractable—partly in and of itself and partly in its relationship to Myc. *kerā*. It would have to be assumed that the inherited feminine $\hat{k}ér-h_2 / \hat{k}r-éh_2$ - split into two different \bar{a} -stems (*kerā*, $\bar{a}s$ vs. ἄρα, $\bar{a}\varsigma$), and that one of them became neuter while the other, to all appearances, remained feminine.

But there is no plausible way of explaining how a feminine \bar{a} -stem could become neuter in Greek (cf. § 9.7.2.2b). Even if there were, we remain confronted by the problem of the paradigm ἄρα / κῶρατ- 'head'. To start (for Greek) with a paradigm that involves only a stem $\hat{k}(e)r-(e)h_2$ - is to abandon, by definition, any attempt to relate the Gk. neuter oblique (< $\hat{k}rh_2sn$ -) to the Skt. neuter oblique (< $\hat{k}rh_2sn$ -) in the ideal way—that is by giving the two unique paradigms to which they belong a single explanation (a common starting point in PIE). To abandon this attempt before making it is methodologically unsound.

32.1 To summarize, the $\hat{k}(e)r-(e)h_2$ - reflexes, if they all come from one original paradigm at all, would have to come from a proterokinetic $\hat{k}ér-h_2$ (§ 31.1 f.). This is unlikely to have been inherited into the IE languages as a neuter (§ 31.3.2), but a feminine of this sort makes for difficulties in accounting for the stem-shape and gender of neut. nom.-acc. ἄρα (§ 31.3.3). It follows that ἄρα itself may not plausibly be taken to reflect either a proterokinetic neuter or a proterokinetic formation at all. And since the paradigm that has given rise to ἄρα is unquestionably the one whose most original locative appears (reduced

–§§ 26.7 ff., 28.4) in (επ)καρ / Hitt. (*kit*)*kar*, and the one which served as the basis of compositional -κ(α)ρος / OP -*θara-* (§§ 25, 28.3), it may be concluded that this non-proterokinetic paradigm 1) existed in PIE (-καρ = -*kar* < - $\hat{k}ṛh_2$ < - $\hat{k}reh_2$; -κ(α)ρος = -*θara-* < - $\hat{k}r(h_2)o-$) and 2) meant 'head' already at that stage (§ 30.2). In short, a non-proterokinetic $\hat{k}r-(e)h_2$ - 'head' can be attributed to PIE with some confidence.

32.2 Myc. *kerā* 'horn (material)' together with Hitt. *karā-ṃar* 'horn', however, present an entirely different picture. It is practically beyond doubt that these forms jointly reflect a single paradigm. And if it may be supposed that *karā-ṃar* points to a pre-Hittite \bar{a} -stem *karā* (§ 11.2), then that paradigm had root apophony. And if it had root apophony, it also had suffix apophony (§ 31.1). If, furthermore, both were "normal" \bar{a} -stems (§§ 11.2, 14.1), it means that full grade - $e-h_2$ - was generalized as the suffixal vocalism in both languages—certainly on the model of the much more productive feminine - $e-h_2$ type. In the case of the Hittite form, it is of some interest to note that this would have to have occurred at a very early date, given the elimination of the - $e-h_2$ feminines themselves as a recognizable type in that language.

For the gender of the $\hat{k}(e)r-(e)h_2$ - that lies behind the two 'horn' forms, one would think of feminine first—both because Myc. *kerā* is probably synchronically feminine, and because this would accord best with the re-interpretation of the -(e) h_2 -stem as a "normal" \bar{a} -(- $e-h_2$ -) stem. As to the original inflection, it would be attractive to suppose that a suffixal full grade - \bar{a} - (< - $e-h_2$ -) was well enough represented that the paradigm as a whole was susceptible to re-interpretation as an - $e-h_2$ formation. This practically guarantees a feminine proterokinetic $\hat{k}ér-h_2$ / $\hat{k}r-éh_2$ - 'horn (material)' as the inherited source of Myc. *kerā* and Hitt. *karā-ṃar*. It has simply generalized the full grade suffix (or become an \bar{a} -stem) and the root vocalism has been divergently levelled in Greek and Hittite.

32.3 If, therefore, the $\hat{k}(e)r-(e)h_2$ - reflexes are divided into two groups according to what they actually mean, this grouping receives automatic further support on other grounds as well. It emerges that those meaning 'horn' are also those for which a feminine $\hat{k}ér-h_2$ with ideal proterokinetic inflection is attractive, while neither inherited feminine gender nor simple - h_2 / - eh_2 - inflection is satisfactory for the group made up of the forms presupposing 'head'. To this may be added that both the 'horn' reflexes have every chance of being \bar{a} -stems of the banal sort, but the 'head' reflexes, and these only, alternate between $\hat{k}(r)$

$\check{e}h_2-$ ($\kappa\acute{\alpha}\rho\alpha$, Ind. * $\acute{s}r\bar{a}$ -ya-) and $\hat{k}r-h_2-$ ($-(\kappa(\alpha)\rho\alpha\varsigma$, OP - $\theta ara-$; - $\kappa\alpha\rho$, Hitt. - kar), which excludes a synchronic analysis - $e-h_2$, at least for the time at which they or their models were formed. In other words, if one and the same $\hat{k}(e)r-(e)h_2$ -paradigm was the source of both the 'horn' forms and the 'head' forms, it must be a suspicious coincidence that none of the more specially conditioned and isolated $\hat{k}r-h_2$ -alternants, produced by early processes, happens to have a meaning in the 'horn' area. And it would therefore seem worthwhile to consider the possibility that PIE had a feminine $\hat{k}ér-h_2 / \hat{k}r-éh_2$ - 'horn (material)', which became an \bar{a} -stem in two languages, beside a $\hat{k}r-(e)h_2$ - 'head' that was probably neither feminine nor inflected proterokinetically (§ 31). And, far from becoming an ordinary \bar{a} -stem, this 'head' formation underwent a development (or series of developments) that eventually resulted in the unusual paradigm that is found in Greek $\kappa\acute{\alpha}\rho\alpha / \kappa\rho\alpha\alpha\tau-$, with a partial parallel in Vedic (oblique $\acute{s}irṣṇ-$).

The immediate question, in any case, is the ultimate relationship between $\hat{k}ér-h_2$ 'horn (material)' (Myc. $ker\bar{a}$, Hitt. $kar\bar{a}-\bar{u}ar$) and the $\hat{k}r-(e)h_2$ - 'head' of $\kappa\acute{\alpha}\rho\alpha$ etc. In this connection, we may now present evidence that strongly suggests that the relationship between two items with these two meanings ought to be that of a substantive and its derivative. The evidence comes from Iranian and Latin.

33.1 The Iranian form in question is $s\bar{a}ra$ - 'head' which appears in Avestan both as a simplex³ and in several compounds: $s\bar{a}ra-u\bar{u}\bar{a}ra$ - 'helmet', $pa\check{s}\bar{o}-s\bar{a}ra$ - 'with head forfeit', $\check{j}r\bar{o}-s\bar{a}ra$ - 'lively-headed, shrewd', and $a-s\bar{a}ra$ - 'headless, without chief(s)'.⁴ Av. $s\bar{a}ra-u\bar{u}\bar{a}ra$ - also appears as Mid. Pers. $s\bar{a}rv\bar{a}r$. Some doubt, however, has been cast upon the etymological correctness of the \bar{a} of the form as transmitted.

Kuiper (*Acta Orientalia* 17, 45–6), in connection with a discussion of Middle Persian-influenced writings in Avestan of \bar{a} for etymological Iranian a , suggests that Avestan $s\bar{a}ra$ - could be an example of this phenomenon. But Kuiper's only positive reason for suspecting that the word is etymologically * $sara$ - is that it is unlikely that a "thematische Weiterbildung" of the stem seen in Greek $\kappa\acute{\alpha}\rho$, as he interprets the formation,

³ Even if only just barely: $s\bar{a}rahe$ (Nīr. 42) is unclear, but the accusative $s\bar{a}r\bar{a}m$ (Yt. 5.77) seems secure enough, since even if the reading $s\bar{a}r\bar{a}ma$ (F1) is accepted (Bartholomae *AirW*, 1572), this can hardly be taken as anything but acc. $s\bar{a}r\bar{a}m$ with postposed \bar{a} .

⁴ The apparent athematic nom. plural $as\bar{a}r\bar{o}$ (V. 1.19) is probably not genuine, since it directly follows a $y\bar{o}$ which itself ought to be plural. Perhaps the whole phrase $y\bar{o} as\bar{a}r\bar{o}$ is incorrectly singular for plural.

would show a lengthened grade. This view of the derivation of *sāra-*, however, is not attractive in the first place, and a more satisfactory one (which allows for a genuine long vowel) is possible (§§ 33.6 ff.). Furthermore, the Mid. P. word for 'head' is *sar* (< *sarah-*), not **sār*, and it is difficult to explain why what must therefore be a *mater lectionis* (eventually resulting in *sār-*) should have been consistently inserted into the thematic simplex and four of its compounds, but not into the *s*-stem simplex *sarah-*. There are consequently no real grounds for altering the transmitted *sāra-*, and it ought to be taken at face value.⁵ At the same time, it may be noted that this decision will have no major consequences (cf. § 33.8). [*]

33.2 Avestan *sāra-*, in turn, will almost certainly reflect $\hat{k}ēr h_2-o-$. The other theoretical possibilities ($\hat{k}ēro-$, $\hat{k}ōro-$, $\hat{k}ōr h_2o-$) cannot be given plausible derivational histories. In any case, *sāra-* cannot be directly equated with OP compositional *-θara-*, mentioned above (§ 28.3). And nothing whatever can be learned from Armenian *sar*, *-oy* 'peak, high place'.⁶ In theory, this form could be a genuine Armenian inheritance (< $\hat{k}r h_2os$) exactly parallel to Skt. *śīraḥ*/Av. *sarah-* or the Arm. reflex of a $\hat{k}r h_2o-$ (which is, however, otherwise unknown as a simplex). But it could be an Iranian loanword in the first place at least as well. If so, there is no telling whether it reflects the Iranian formation seen in Av. *sarah-* or the one in *sāra-*.

33.3 There is, however, one probable correspondent of Av. *sāra-* 'head'. It is preserved as the first member of a synchronically unanalyzable Latin compound, although this is not the traditional analysis of the form. Latin *cernuus* is glossed:⁷ *cernuus dicitur proprie inclinatus quasi quod terram cernit*. The etymology offered is fanciful, but it is clear at any rate (even without this gloss) that the word (Lucil. +) means 'with the head bent down/forward'. In view of this meaning, it has naturally been traditionally referred to the $\hat{k}(e)r$ -group in general, and specifically to the other formations belonging here that mean 'head'.⁸ But

⁵ I would like to express thanks to J. Schindler for clarifying in conversation some of the problems involved in this point.

⁶ Cf. Mayrhofer *KEWAi*, 3, 341 for further references.

⁷ Nonius Marcellus (ed. Lindsay) 1, 30 (M 20). Nonius quotes Lucilius 129 and 703 (but cf. Marx *ad locc.*), Varro *de VPR* (*cernuare*), and Vergil (*Aen.* 10.894 ... *eiectoque incumbit cernuus armo*—of a horse), on which Servius says *cernuus equus dicitur qui cadit in faciem quasi in eam partem qua cernimus*.

⁸ Walde-Hofmann *LEW* 1, 206 for references to the older literature. Ernout-Meillet *DELL*, 116 suggest the traditional analysis noncommittally.

although this root etymology is inevitable, a satisfactory interpretation of the rest of the formation is lacking. It can be assumed at the outset that if *cernuus* has anything at all to do with *śírah* etc., it must be a rather old form, since any *ker-* derivative meaning 'head' that was present in pre-Latin⁹ was replaced by *caput*, which is itself inherited.

The most wide-spread reconstruction of *cernuus* is *kersnuu-*/*kersnuo-*,¹⁰ which is phonologically possible, but is open to both morphological and semantic objections no matter how it is segmented. A *kersn-(o)uo-* is plausible only if the *kersn-* is comparable to Skt. *śīrṣṇ-*, Gk. *κράν-(ιον)/κάρην-(α)* etc., which strongly suggest (together with other forms) a PIE *ḱerh₂sn-*. Only *ḱerh₂sn-(o)uo-* could therefore be considered an acceptable pre-form, but this would result in Latin **cerānuus* (by way of *kerasn(o)uo-*).¹¹ Furthermore, *-(u)uo-* forming denominative adjectives does not really exist,¹² and as far as Latin is

⁹ And there was, of course, at least one to judge by the presence of *cerebrum* in Latin (cf. § 70).

¹⁰ Cf. note 8 just above.

¹¹ Or *kerasn-* > *keresn-* > **cerēnuos*? We may also note that the root *e*-grade of this analysis is not quite trivial (§ 70.3).

¹² Or scarcely, at any rate. As parallels for a putative analysis **kersn-uo-*/*kersn-e/o*uo-, it is of no help to think of

- 1) the apparently primary color adjectives (L. *flavus* 'blond' : OHG *blāo* 'blue' etc.).
- 2) the apparently primary adjectives for 'left' (L. *laeuus* : Gk. *λαϊός*, L. *scaeuus* : Gk. *σκαϊός*) and others (e.g. L. *prauus*, *saeuus*; Ved. *pūṛva-*, L. *priuus*).
- 3) the verbal adjectives of the type *g^hi_h3-uo-* 'alive' (L. *uiuus* : Ved. *jīvā-* etc.).
- 4) a certain number of formations that are segmentable *-(u)uo-*/*-e/o*uo- from the historical point of view. These are cases in which a *u*-stem has been further suffixed with *-o-*, and, more specifically, may be subdivided into cases
 - a) in which the *-o-* apparently forms an endocentric derivative—*ph₂tr-ōu-* 'paternal uncle' (πάτρως) : *ph₂tr-ou-o-/ph₂tr-u-u-o-* (L. *patruus*); *tr_h2u-* 'thin' (Ved. *tanú-* etc.) : *tr_h2u-o-* (Gk. *τανα(F)ός*)
 - b) in which the *-o-* derivative is an exocentric one—Ved. *pārsu-* 'rib' : *pārsvā-* 'side'

The few examples that remain of potential denominative adjectives in *-uo-* make it clear that as such the suffix was simply a possessive one—RV *āṇa-* 'stream' : *āṇa-vā-* 'full of water'; RV *añjī-* 'unguent' : AV *añjī-vā-* 'annointed' (RV *añjī-mānt-* 'id.'). Gk. *ὄρος* 'height > mountain' : RV *īṣ-vā-* 'high' (?); Gk. *τέλος* 'fulfillment' : *τελεθ-* 'complete' (Hom. *τέλειος*, Cret. *τέληος*). Cf. Brugmann *Grdr*² 2.1, 199 ff.—esp. 204 f., W-D 2.2, 866 ff.—esp. 868, Chantraine *Formation*, 122 ff., Peters *Untersuchungen*, 88 (note 40).

In short, a **kersn-uo-*/*kersn-e/o*uo (even if the *kersn-* could be justified) might reasonably have meant 'having a head' (or even 'found in, on the head'). How this could have come to mean 'with the head inclined' is unclear.

concerned, there are no convincing examples of such a formation.¹³ The same can be said of $-o\mu o-$. And even if the suffix were formally in order, it is impossible to see how a secondary adjectival suffix $-(u)\mu o-$ or $-o\mu o-$ could make a noun meaning 'head' ($*\hat{k}ersn-$) into an adjective meaning 'with the head inclined'. Similar morphological objections can be made to a $\hat{k}ers-n\mu o-$ (or $-no\mu o-$), since the unextended s -stem seen in $\acute{s}irah$ also had $-h_2-$ after the root, and this is almost certainly confirmed for Latin itself by *cerebrum* 'brain' (< $\hat{k}erh_2sro-$: § 70) and, ultimately, by *crābrō* 'hornet' as well (§ 74). There is no evidence anywhere for a $*\hat{k}er-s-$ 'head'.

Nor is it possible to invoke Breton *quernn* 'head' as support for a $*\hat{k}er-n(o)-$ 'head' from which to derive *cernuus*. The semantic and formal difficulties presented by the pre-supposed $-(u)\mu o-/o\mu o-$ derivative would still remain, and comparison of the Br. form with W. *cern* 'jaw bone, side of the head' and Irish *cern* 'angle, corner' makes it clear that 'head' is very much an extended meaning of *quernn*¹⁴ that cannot be counted on for a hypothetical Latin correspondent.¹⁵

33.4 It now appears from Avestan $\acute{s}āra-$, however, that the familiar $\hat{k}erh_2(e)s-$ and $\hat{k}erh_2(s)e(n)-$ (in addition to $\hat{k}er(e)h_2-$) are not the only

¹³ See Leu², 302 f. – esp. 303 (§ 280.2.c).

¹⁴ The Slavic correspondents make this still clearer – cf. e.g. Trautmann *BS/W*, 129.

¹⁵ The suggestion (Thurneysen *GGA* 1907, 84) that *cernuus* is a technical term borrowed from Greek acrobatic terminology is to be rejected if only because the $*\kappa\epsilon\rho\nu\acute{\epsilon}\omicron\varsigma$ that it supposedly continues is unattested (so Walde-Hofmann 1, 206).

The frequently repeated etymology of $\kappa\rho\alpha\nu\acute{\iota}\zeta\alpha\iota$ ($\acute{\epsilon}\pi\iota$ $\kappa\epsilon\phi\alpha\lambda\acute{\eta}\nu$ $\acute{\alpha}\pi\omicron\rho\rho\acute{\iota}\omega\iota$ – Hsch.) and $\kappa\epsilon\rho\alpha\nu\acute{\iota}\zeta\alpha\iota$ ($\kappa\omicron\lambda\upsilon\mu\beta\eta\sigma\alpha\iota$, $\kappa\upsilon\beta\iota\sigma\tau\eta\sigma\alpha\iota$ – Hsch.) starts with $\kappa\rho\alpha\nu\acute{\iota}\zeta\alpha\iota$, makes it a denominative ($*\kappa\rho\alpha\nu\acute{\iota}\zeta\omega$) to $\kappa\rho\alpha\nu\text{-(}\acute{\iota}\omicron\nu)$ etc. 'head', and explains $\kappa\epsilon\rho\alpha\nu\acute{\iota}\zeta\alpha\iota$ as a by-form of the same verb that has been remade on the model of $\kappa\acute{\epsilon}\rho\alpha\varsigma$ 'horn' (Frisk *GEW* 1, 824; Chantraine *DELG*, 516). But if the verb meant 'plunge headlong, tumble headfirst, throw oneself on one's head', why should a $\kappa\rho\alpha\nu\acute{\iota}\zeta\omega$, whose first syllable synchronically suggested $\kappa\rho\alpha\nu\acute{\iota}\omicron\nu$ etc. perfectly satisfactorily, be remodelled to resemble $\kappa\acute{\epsilon}\rho\alpha\varsigma$ 'horn'? Surely it is preferable to suppose the reverse – namely that the original form of the verb was $\kappa\epsilon\rho\alpha\nu\acute{\iota}\zeta\omega$ and that this was redone as $\kappa\rho\alpha\nu\acute{\iota}\zeta\omega$ precisely because of $\kappa\rho\alpha\nu\acute{\iota}\omicron\nu$ etc.

As to the analysis of $\kappa\epsilon\rho\alpha\nu\acute{\iota}\zeta\omega$ itself, the meaning 'plunge, tumble' is reminiscent of nothing so much as OIr. (*do*) $\cdot cer$ 'he fell'. And although the details of the development are not precisely recoverable, one might conjecture that the old root aorist $\hat{k}erh_2-t$ 'fell', continued by the Irish form, served at some point as the basis for a new present of one of the nasal types in Gk. (e.g. $\kappa\epsilon\rho\alpha-$: $\kappa\epsilon\rho\alpha\text{-}\nu\epsilon/o-$; cf. Ved. aor. $\acute{p}\bar{a}-$: Aeol. $\pi\omega\text{-}\nu\epsilon/o-$ 'drink'). For the remodelling of the hypothetical resulting $*\kappa\epsilon\rho\acute{\alpha}\nu\omega$ 'fall' to $\kappa\epsilon\rho\alpha\nu\acute{\iota}\zeta\omega$ cf. $\acute{\alpha}\lambda\acute{\epsilon}\gamma\omega$: $\acute{\alpha}\lambda\epsilon\gamma\acute{\iota}\zeta\omega$, $\gamma\acute{\epsilon}\mu\omega$: $\gamma\epsilon\mu\acute{\iota}\zeta\omega$, $\acute{\epsilon}\theta\omega$: $\acute{\epsilon}\theta\acute{\iota}\zeta\omega$ etc. (Schwyzer *GG* 1, 736). The remodelling of $\kappa\epsilon\rho\alpha\nu-$ to $\kappa\rho\alpha\nu-$ (because of $\kappa\rho\alpha\nu\acute{\iota}\omicron\nu$ etc.) could have occurred either at the $*\kappa\epsilon\rho\acute{\alpha}\nu\omega$ or at the $\kappa\epsilon\rho\alpha\nu\acute{\iota}\zeta\omega$ stage.

possible stem forms of words for 'head'. And taking a $\hat{k}ēr h_2 o-$ into consideration immediately suggests for *cernuus* the possibility of a compound $\hat{k}ēr h_2 o-no\mu o-$ 'with the head inclined', having a first member identical to *sāra-* and a deverbative second member derived from L. (*ad*)-*nuo* 'nod (assent)' (cf. $\nu\acute{\epsilon}\acute{\upsilon}\omega$ 'incline, bend forward, nod'). Morphologically, this would be an old example of a compound type that is in any case relatively well-represented in Latin¹⁶ (e.g. Plaut. *damni-ficus* 'pernicious', *nugi-uendus* 'seller of baubles'), and includes other examples which at least point to an archaic starting point: *foedi-fragus* 'perfidious' (Laeu. ap. Gel.), *opi-tulus* 'bearing aid' (P.F.) with the denominative *opitulari* (Plaut. +) etc.

This $\hat{k}ēr h_2 o-no\mu o-$ 'inclining the head' would develop to $\hat{k}ērono\mu o-$ in the first instance, and syncope of the short vowel in the open second syllable would then be highly probable at some point during its development within the history of Latin. A short vowel in a medial open syllable between a liquid and a nasal seems to have been especially liable to be lost: *culmus* 'stalk' (< *kolamo-* cf. $\kappa\alpha\lambda\acute{\alpha}\mu\eta$ 'id'), *armus* 'arm' (< *aramo-* cf. Ved. $\bar{i}rmá-/Av. arāma-$ 'arm'), *palma* 'palm' (cf. $\pi\alpha\lambda\acute{\alpha}\mu\eta$), *ulna* 'elbow, arm' (cf. $\acute{\omega}\lambda\acute{\epsilon}\nu\eta$), *uolnus* 'wound' (which must have lost a vowel between the *l* and the *n* since original *-ln-* > L. *-ll-* : *tollo* etc.). As more specific parallels for this syncope, one might also note some other cases of originally quadrisyllabic compounds with a long first syllable, a short (open) second syllable and then the boundary: *sinciput* 'bisected smoked boar's head' < *sēmī-caput*, *anculus* 'servant' < *ambī-quolos* (= $\acute{\alpha}\mu\acute{\phi}\iota\pi\omicron\lambda\omicron\varsigma$), and some others. With identical syllabic structure, but a differently placed boundary, there is *prāndium* 'lunch' < *prām-ēdijom*. It is impossible to tell whether *cernuus* (which has no Romance reflexes) had \bar{e} or *e*, but a shortening of *cēr-* to *cern-* (a kind of secondary Osthoff's Law treatment) is perfectly possible to judge, e.g., by *ūndecim* 'eleven' < *ūndec-* < *oḡnodec-*. This is perhaps also the explanation of *ulna* vs. $\acute{\omega}\lambda\acute{\epsilon}\nu\eta$. A lengthened grade will be preferred, in any case, because of Avestan *sāra-*,¹⁷ whose lengthened grade may be altered only arbitrarily.

¹⁶ Leu², 394 f.

¹⁷ The Latin form argues further against $\hat{k}ōro-/kōrh_2 o-$ for Av. *sāra-* (§ 32.3). A Latin "compositional linking vowel" (Leu² 389 f.) and thus a first member *ker(h₂)-o- vel sim.* (implying $\hat{k}er h_2-$ 'head'), or a first member $\hat{k}er h_2-$ (> L. *cerā-*) in the first place (cf. the phonological possibility of a $\hat{k}er h_2$ in Hitt. *kit-kar* § 28.5) will not turn out to be attractive because of the probable original structure of the paradigm of $\hat{k}r-(e)h_2-$ 'head' (§§ 35 ff.). Likewise, a compositional $\hat{k}er(h_2)o-$: simplex $\hat{k}er h_2(e)s-$ (or whatever might

33.5 To summarize, it appears that Av. *sāra-* points to an *o*-stem formation for 'head'. If Latin *cer(nuus)* is to have a direct comparandum, it would have to be this. The only established formation to which the *-o-* could have been suffixed is an $-(e)h_2$ -stem: $\hat{k}r-(e)h_2$ - 'head' or $\hat{k}er-h_2$ 'horn (material)'.

If $\hat{k}r-(e)h_2$ - 'head' were the derivational base, the derivative $\hat{k}ēr-h_2-o-$ would be completely functionless semantically. The *-o*-stem would not really be a derivative at all, but a mechanical thematization. This is not itself unlikely, especially since something as rare as a singular neuter $-(e)h_2$ -stem might well be considered a candidate for rearrangement. But this view of $\hat{k}ēr-h_2-o-$ encounters the objection already made, in effect, by Kuiper (§ 33.1). The \bar{e} -grade root, which there is no positive reason to doubt, speaks against it, and in fact, it is doubtful that even an *e*-grade could be justified in this case, since even this would be a functionless *vṛddhi* (§ 35).

On the other hand, $\hat{k}ēr-h_2-o-$ may easily be analyzed as a true derivative with a real function if it is taken to be a derivative of $\hat{k}er-h_2$, the formation directly continued by Greek *kerā* 'horn (material)' and the derivational base of *kerajo-* 'made of horn'. That this was the stem of a substantive that named a material is put fairly well beyond doubt by the Mycenaean evidence (§§ 12.2 ff.). It need only be suggested that the precise meaning of this noun in PIE was something like 'the hard, bony material of (= in, on etc.) the head of humans and most animals' (cf. further § 33.9). [*]

33.6 At any rate, a $\hat{k}ér-h_2$ 'head-bone (material)' would allow for a thematic derivative with precisely the right meaning:

$\hat{k}ér-h_2$ 'head-bone (material)' → adj. $\hat{k}ēr-h_2-ó-$ 'made of this material' > subst. $\hat{k}ēr-h_2-o-$ 'object made of head-bone (mat.), skull' [*]

The further semantic generalization of 'skull' to 'head' is paralleled many times in the IE languages.¹⁸ In addition, the formation of what is functionally a material adjective by suffixation of the thematic vowel and *vṛddhi* of the root is exactly comparable to a case like:

$h_2éǵ-(o)s$ 'metal (material)' (Ved. *áyah*, L. *aes* etc.) → $h_2ēǵ-es-ó-$ 'made of metal' (RV *āyasá-*).

be the precise eventual basis of *vulnus* : *vulnificus*, *foedus* : *foedifragus*) will be disfavored by the complete lack of evidence for (and the improbability of) a $\hat{k}erh_2(e)s-$ that means 'head' rather than 'horn' (§§ 40 ff., 54 ff., with systematic reasons for the observable fact that no athematic stem meaning 'head' has a full-grade root at all).

¹⁸ See, e.g., Buck *Synonyms*, 212 (4.20).

The substantivization of such an adjective is a trivial assumption. It may also be noted that this type of material adjective with $vṛddhi$ of the root and suffixal $-o-$ is not to be distinguished in any important way from other denominative adjectives with these morphological features, but with the function of describing one thing as 'belonging to' something else.¹⁹ E.g. ($dīey-$)/ $dīy-$ 'heavens' → $deiy-o-$ 'belonging to/in the heavens' > 'god' etc. In this way $\hat{k}ér-h_2$ 'head-bone (mat.)' : $\hat{k}ēr-h_2-o-$ '(made) of head-bone' (> 'skull') is comparable to, but no doubt older than, Gk. $kerā$ 'head-bone (mat.)' > 'horn (mat.)' : $kerajo-$ '(made) of horn', where the derived 'material' adjective has a suffix ($-iyo-$) that is generally found with the function of forming adjectives that also describe something/someone as 'belonging to' something/someone else (§ 13.2).

33.7 Before leaving the question of the analysis of $\hat{k}ēr-h_2-o-$ 'head', a possible further refinement may be suggested. Starting with a "genitival" adjective $\hat{k}ēr-h_2-o-$ 'of head-bone' that functions as a material adjective '(made) of head-bone' and is eventually substantivized to 'skull' is perfectly satisfactory. But a slightly different account of the details of the semantics is suggested by RV $pārsu-$ /Av. $parəsu-$ 'rib' : RV $pārsu-á-$ (n) 'side, the ribs (collective)'. In this case, an I-Ir. $pārsu-$ 'rib' is the basis of a "genitival" $pārsu-á-$ 'of the rib(s)', and this has been substantivized (in the neuter) to something like '(consisting) of the ribs', synchronically interpretable as 'side' or 'the ribs (collective)'. Given the semantic area in question here, this makes it tempting to start in parallel fashion with a $\hat{k}ēr-h_2-ó-$ 'of head-bone (material)' with substantivization to '(consisting) of head-bone', whence 'the head-bone (material)' in a collective sense, 'skull, head'. In that case, $\hat{k}ér-h_2$ 'head-bone' would be to $\hat{k}ēr-h_2-o-$ 'the head-bone (collective)' as $pārsu-$ 'rib' is to $pārsu-á-$ 'side'.

33.8 Finally, if one should insist for any reason on taking Av. $sāra-$ as a writing of etymological $*sara-$ (§ 33.1), this would point, when taken together with $cer(nuus)$, to a $\hat{k}er-h_2-o-$, which could then also be seen, in turn, in OP $fra-θara-$, though this has no advantage over the analysis presented earlier (§ 28.3). However this may be, a $\hat{k}er-h_2-o-$ (should good reasons for it emerge) may also be viewed as a derivative of $\hat{k}ér-h_2$ 'head-bone (material)'. In this case, $\hat{k}ér-h_2$: $\hat{k}er-h_2-o-$ 'skull' will be parallel to RV $pīvas-$ 'fat' : $pīvas-á-$ 'fatty' or $met-(e)s-$ 'year' (Fέτος

¹⁹ W-D 2.2, 103 ff.—esp. 104 f., 129 f. for Vedic examples.

etc.): $\muets-ó-$ 'having (one) year (of life)', 'yearling' (RV *vatsá-* 'calf'). These denominative adjectives in *-o-* without *vrdhhi* describe a thing as being 'provided with' something or 'having' it.²⁰ It is not difficult to imagine a denominative $\hat{k}érh_2-o-$ 'having, containing the head-bone (material)' substantivized to 'skull'. This leaves the major point of the present portion of the discussion unchanged. We still have a word for 'head' ($\hat{k}érh_2-o-$) that is very probably a derivative of the word for 'head-bone/horn (material)' that should be recognized in any case (Myc. *kerā*). But without some decisive evidence against taking the lengthened grade of *sāra-* seriously, the analysis above (§ 33.6/7) and the reconstruction $\hat{k}érh_2-o-$ 'head' will remain the first choice.

In either case, a $\hat{k}érh_2-o-$ 'skull, head' will itself have to be attributed to PIE if it is to be found both in Av. *sāra-* and L. *cer(nuus)*. And since PIE $\hat{k}érh_2-o-$ is plausibly analyzed as a derivative of $\hat{k}ér-h_2$, one would suppose that a $\hat{k}ér-h_2/\hat{k}r-éh_2-$ was itself already present in the protolanguage—and in the meaning 'head-bone (material)'.

33.9 There is a general advantage in seeing $\hat{k}érh_2-o-$ 'head' as a derivative of $\hat{k}ér-h_2$ 'head-bone (material)'. With this hypothesis, it is possible to unite all of the formations that have so far been explicitly analyzed under one basic semantic heading (cf. § 29.2):

'head-bone(s): object(s)' (IIb n. 136) $\hat{k}or-u-/ker-u-$	'head-bone: object' $\hat{k}(e)r-n(o)-$	'head-bone: material' $\hat{k}ér-h_2$	'(made) of head-bone' / 'the head-bone (coll)' > 'skull' $\hat{k}érh_2-o-$ (§ 33.6/7)
--	---	---	---

This amounts to supposing that PIE simply distinguished between 'bone' in general ($h_2e/ost-$) and 'head-bone' more specifically ($\hat{k}er-$ plus $-u-$, $-n(o)-$ or $-h_2-$), and that it further distinguished between object ($\hat{k}or-u/\hat{k}(e)rn(o)-$) and material ($\hat{k}érh_2$) in the case of 'head-bone'. The word for 'head' included in the scheme above thus has this meaning only by virtue of being a derivative of one of the three more basic formations.

34.1 To summarize, there are serious difficulties—both semantic (§§ 30.2 ff.) and formal (§§ 31 f.)—in tracing all the $\hat{k}(e)r-(e)h_2$ -reflexes to a single PIE paradigm. On the positive side, however, it appears that some h_2 -stem had the meaning 'head' (§ 30.2) and some h_2 -stem had the meaning 'horn/head-bone (material)' (§ 33.8) already in the protolanguage. It also seems that the second of these ($\hat{k}ér-h_2$ 'bony substance

²⁰ W-D 2.2, 136 f. for Vedic examples.

of the head') has served as the derivational basis of an inherited word ($\hat{k}ēr-h_2-o-$) for 'head' (§ 33). It therefore seems attractive to proceed on the assumption that $\hat{k}ér-h_2$ 'head-bone (material)' and $\hat{k}r-(e)h_2-$ 'head' were two independent items already in PIE. As to their relationship, a possible answer lies in the derivation $\hat{k}ér-h_2$ 'head-bone (material)' → $\hat{k}ēr-h_2-o-$ 'head'. For this guarantees that one solution that could be considered plausible is that $\hat{k}r-(e)h_2-$ 'head' is a derivative of $\hat{k}ér-h_2$, the word for the substance. At least in this primary layer of formations, there is reason to believe that derivation in the direction 'head-bone (material)' → 'skull, head' is a definite possibility.

34.2 If $\hat{k}r-(e)h_2-$ 'head' is a derivative of the h_2 -stem that denoted the material 'head-bone', it is a derivative without suffixation. We may look into this first, and then turn to the question of the gender distinction between the feminine-looking reflexes of $\hat{k}ér-h_2$ (§ 32.2) and the neuter Gk. $\kappaάρα$ (§ 35).

A derivative formed without the addition of a suffix is, practically by definition, an example of a phenomenon that has been recognized since Johannes Schmidt²¹ showed that PIE neuter consonant stems could make collectives without the addition of overt derivational morphemes. Singular (or singulative) neuters in $-n$, $-s$, and $-r$, for example, had collectives in $-\bar{e}n/-\bar{o}n$, $-\bar{e}s/-\bar{o}s$, $-\bar{e}r/-\bar{o}r$. Instead of derivational suffixes, those collectives were marked by changes in their inflectional apophony.²²

This process shows up in two ways that are most directly relevant to the present problem. In both cases, a simplex neuter substantive with a given $R(oot) + S(uffix)$ structure is opposed to a second simplex neuter substantive that has the same R and S , but a different function and/or different apophonic characteristics:

- 1) neut. sg. vs. n-a neut. pl. In this case the original collective is found functioning synchronically as the case form of the n-a pl. Belonging here are oppositions within a paradigm like Av. sg. *manō* 'mind etc.' (< *menos*) : pl. *manā* (< *menōs*)²³ for s -stems. Comparable are certain r/n stem paradigms²⁴ such as

²¹ The description that follows is essentially a summary of the views of Schmidt *Neutra*, 88–226 and *passim* supplemented by some points made by Schindler, *BSL* 70, 3 ff. In what follows, only some of the points are specifically footnoted.

²² A clear summary at Schmidt *Neutra*, 92.

²³ Parallels elsewhere for these s -stem collective formations are suggested by Schmidt *Neutra*, 136 and 149.

²⁴ Schindler, *BSL* 70, 3 ff.

Hittite sg. $\underline{u}ātar$ (< $\underline{u}od-r$) 'water' : pl. $\underline{u}idār$ (< $\underline{u}ed-ōr$) and YAv. sg. $aiiarā$ 'day' (- \underline{r}) : GAv. pl. $aiiārā$ (- $\underline{ōr}$). Other examples could be added.

- 2) neut. sg. vs. a second neut. sg. Cases of this sort are Latin *semen* 'seed' (- $\underline{m}\eta$) : OCS *sěmę*, OPr. *semen* (- $\underline{m}ēn$), Gk. τέχμαρ 'mark' (- $\underline{m}\eta$) : τέχμαρ (- $\underline{m}ōr$), Hitt. $\underline{u}ātar$ (- \underline{r}) : Gk. ὕδωρ (- $\underline{ōr}$). In addition, a collective with a nom.-acc. - $\underline{u}ēr$ (beside well-represented singular/singulative - $\underline{u}\eta$ / - $\underline{u}en$.²⁵) could account for Hittite $\underline{h}ašduēr$ 'brushwood'.²⁶ Similar collectives may be represented by the Hittite neuters $\underline{s}ūēl$ 'thread' (- $\underline{u}ēl$) and $\underline{u}tnē$ / $\underline{u}tni-jaš$ 'land' (- $\underline{n}ēi$ / - $\underline{n}i\eta$ -os).²⁶

34.3 The source both of the neuter plurals (no.1 just above) and of the neuter singulars (no.2) is a collective originally inflected as a singular with its own paradigm, and independent of the paradigm of the non-collective. In other words, the collective was in the first instance a derivative without suffix. In some cases, the n-a sg. of the collective has been installed in the paradigm of the non-collective and is used there as an actual n-a plural (thus the first group above). Where a separate collective paradigm has been retained beside the non-collective within a single language, it merely constitutes an alternate inflection, or has the status of a separate lexical item with no great difference in function (e.g. τέχμαρ : τέχμαρ). Most often, however, only one member of an original pair (collective : non-collective) has been retained in a given language. For example, Hittite has only the non-collective $\underline{s}akkar$ 'excrement' (< $\underline{s}ok-k$) while Greek has only what was originally the collective (σῶμα < $\underline{s}(e)\hat{k}-ōr$).²⁷

34.4 A further point that has been made along these lines²⁸ is that there is complete formal parallelism between the - $\underline{e}C$ / - $\underline{o}C$ suffixal allomorphs of these n-a neuter collectives and that of animate nom. singulars that stand beside neuters and share the same $R + S$ structure. Neuter sg. - $\underline{m}\eta$: collective - $\underline{m}ōr$ (τέχμαρ : τέχμαρ), for instance, or neuter sg. - $\underline{m}\eta$ collective - $\underline{m}ēn$ (*semen* : *sěmę*) etc. are not distinct in a purely formal way from pairs of the following types:

- 1) neut. $\underline{k}ré\eta h_2$ -s (κρέας, RV *kravíh*) '(piece of) raw, bloody flesh' : masc. $\underline{k}ruh_2$ -ōs (L. *cruor*) 'gore'.

²⁵ Schindler, *BSL* 70, 9 f.

²⁶ Schindler, *BSL* 70, 9.

²⁷ Schindler, *BSL* 70, 5.

²⁸ Schmidt *Neutra*, 90 ff., 135 ff. etc. Summary 225–6.

- 2) neut. $tér-m\eta$ (τέρμα etc.) 'boundary' : masc. $ter-mōn$ (τέρμων)
RV neut. $syúma$ (- $m\eta$) 'binding' : Gk. masc. $\acute{\upsilon}μήν$ (- $mēn$) 'sinew,
membrane'.
- 3) neut. $s(e)h_2-\mu\acute{l}$ 'sun' (RV $svār$, GAv. $huuarō$) : masc. $s(e)h_2-\mu\acute{o}l$
(L. sol).

But the parallelism of $τέκμαρ$: $τέκμων$ etc. to $τέρμα$: $τέρμων$ etc. suggests that neuter collectives with nom.-acc. $-ōC$ were inflected with a paradigm of the same structure as that of animate singulars that show nom. sg. $-ōC$. Hypothetically, a neuter collective in $-ōs$, for example (Av. $manā$ as above), would have had the same accentual and apophonic structure as an animate formation with nom. $-ōs$ (L. $cruor$ etc.). This means, in this case, an amphikinetic paradigm (type $h_2eys-ōs$ / h_2us-s 'dawn').²⁹ By the same token, neuter $-m\eta$ (*semen*) : neuter $-mēn$ (*sēmē*) beside neuter $-m\eta$ (*syúma*) : animate $-mēn$ ($\acute{\upsilon}μήν$) indicates that the suffixal allomorph in $-ēC$ is appropriate both to nom.-acc. neuter collectives and to animate nominatives. And this in turn suggests hysterokinetic inflection for both (type $\pi\alpha-τήρ$ / $\pi\alpha-τέρ-α$ $\pi\alpha-τρ-ός$, RV $vṛṣā$ / $vṛṣ-aṇ-am$ / $vṛṣ-ṇ-aḥ$, perhaps comparable to Hitt. neut. $utne$ / $utni-iaš$ < $-nēi$ / $-ni-ōs$ as above).

34.5 More specifically, we may note here an observation of J. Schindler's³⁰ that the non-collective neuters that have hysterokinetic collectives and animate counterparts (with various functions) are themselves regularly proterokinetic:

proterokinetic neuter	hysterokinetic
non-collective	a. animate
$syúma$ (- $m\eta$ / - $mēn$ -)	$\acute{\upsilon}μήν$ (- $mēn$)
	b. neuter collective
<i>semen</i> (- $m\eta$)	<i>sēmē</i> (- $mēn$)
(- $\mu\acute{l}$ / - $\muēn$ -)	$ḥašduēr$ (- $\muēr$)

35.1 When the problem of the relationship between the two h_2 -stems on $\hat{k}ér$ - was left (§ 34.1), the suggestion had just been made that if $\hat{k}ēr-h_2$ - 'head' (Av. $sāra$ -, L. $cer-nuus$) is a derivative of $\hat{k}ér-h_2$ 'head-bone (substance)', then perhaps $\hat{k}r-(e)h_2$ - 'head' could be taken to be derived from $\hat{k}ér-h_2$ as well. If, however, neuter $\hat{k}r-(e)h_2$ - 'head' is

²⁹ Cf. Eichner, *MSS* 31, 91; Schindler, *Flex. und Wortbildung*, 262f.; *BSL* 70, 3; *Die Sprache* 13, 200f.

³⁰ Made in a talk at the Yale Linguistic Club.

also a derivative of $\hat{k}\acute{e}r-h_2$ 'head-bone (substance)', it is a suffixless neuter derivative of the type surveyed in the meantime (§§ 34.2 ff.), and is therefore a collective. And a collective as the origin of $\acute{k}r-(e)h_2$ - 'head' is just what would be most satisfactory, since $\hat{k}\acute{e}rh_2-o$ - 'head' can plausibly be interpreted as a collective itself (§ 33.7). It would therefore be possible simply to see $\hat{k}\acute{e}rh_2-o$ - 'head' as one type of collective derivative and $\acute{k}r-(e)h_2$ - 'head' as another.

At this stage it is important to recall the point, already mentioned, that was made by Forssman in connection with $\kappa\acute{\alpha}\rho\alpha$ (§ 26.4 f.). Namely, it is likely that this word (as a simplex—§§ 26.8 f., 26.11) showed, from very early on, a heteroclitic paradigm in which all the cases other than the nom.-acc. sg. itself were formed on a stem reflecting $\hat{k}rh_2sn$ -. Whether one equates $\kappa\rho\tilde{\alpha}\alpha\tau$ - directly with Ved. $\acute{s}ir\eta$ - and assumes an inherited "secondary" heteroclite, or takes it as an early (§ 26.5) innovation that is merely paralleled in Vedic, there are more complications than usual in invoking post-PIE levelling of the ordinary kind within a hypothetical paradigm made entirely on the stem of $\kappa\acute{\alpha}\rho\alpha$ itself (i.e. $\acute{k}r-(e)h_2$ -). One may doubt that such a paradigm lasted long enough.

35.2 This point, however, has a corollary which could prove useful. If post-PIE levelling in the paradigm ancestral to Greek $\kappa\acute{\alpha}\rho\tilde{\alpha}$ / $\kappa\rho\tilde{\alpha}(h)\alpha\tau$ - cannot easily be assumed, we may have considerably more faith than would otherwise be possible in the antiquity of the stem shape of the nom.-acc. as Greek presents it—namely with zero-grade root ($\acute{k}r$ -) and full- or lengthened-grade suffix ($-\acute{e}h_2$).³¹

Of the two possibilities ($-\acute{e}h_2$ and $-\bar{e}h_2$) for the reconstruction of the suffix in this nom.-acc., it is lengthened-grade $-\bar{e}h_2$ that is the better choice, since this vocalism is well established in the nom.-acc. of PIE neuter consonant stems while simple e -grade is not. [*] And it is virtually certain that the formation reflected by $\kappa\acute{\alpha}\rho\alpha$ was always neuter: the "secondary" heteroclitic type of inflection seen in the Greek (and Vedic) paradigm is well-paralleled only among neuters (cf. § 54.2), and it is practically impossible to maintain the view that a feminine (or masculine) \bar{a} -stem switched to neuter in Greek (§§ 9.7.2.2 b, 31.3.3).

This combination of zero-grade root and lengthened-grade suffix in a nom.-acc. that seems unlikely to be the result of inner-paradigmatic analogies or regularizations points directly to the reconstruction

³¹ A zero-grade $\hat{k}r-h_2$ for $\kappa\acute{\alpha}\rho\alpha$ is already excluded on phonological grounds.

of a hysterokinetic nom.-acc. neuter $\hat{k}r-éh_2$ as the pre-form of $\kappa\acute{\alpha}\rho\alpha$.³² As a simplex, however, this formation has generalized the syllabic alternant (by Lindeman's Law) $\hat{k}r-éh_2$ in Greek.

35.3 Hittite (*kit*)*kar* 'to/at the head', for its part, presents a *-kar* which, as suggested above (§ 28.5.3), ought not to be dissociated from Greek (ἐπι)κᾶρ. And the two can be accounted for simultaneously only by way of an (eventually reduced) endingless locative $\hat{k}r-eh_2$: the improbability of a zero grade suffix in such a locative excludes both $\hat{k}er-h_2$ and $\hat{k}r-h_2$ as the most original form (§§ 26.6.4, 26.8.4), and a locative $\hat{k}r-eh_2$ encounters phonological obstacles. A paradigm that was hysterokinetic in the very first instance ($\hat{k}r-éh_2$ / $\hat{k}r-h_2$) theoretically would have had the one locative structure ($\hat{k}r-eh_2$) that is both morphologically in order and phonologically unobjectionable. A hysterokinetic $\hat{k}r-éh_2$ 'head' can therefore be squared both with $\kappa\acute{\alpha}\rho\alpha$ and with Hitt. *-kar*/Gk. *-καρ*. We may postpone for the moment (cf. § 38) the alignment of a $\hat{k}r-éh_2$ with the more marginal pieces of evidence for $\hat{k}r-(e)h_2$ 'head'.

36.1 At this point, four different factors, each of which has emerged separately in the course of the discussion, all automatically fall into a coherent picture. On the one hand, the $\hat{k}(e)r-(e)h_2$ - reflexes in the semantic 'horn' area (Myc. *kerā* / *kerajo-*, Hitt. *karā-uar*) are most easily seen as continuing a proterokinetic $\hat{k}ér-h_2$ (cf. esp. § 32.2). On the other hand, the $\hat{k}r-(e)h_2$ - that may be set up to unite the $\hat{k}(r)rēh_2$ - / $\hat{k}rh_2$ - forms that mean 'head' is best taken as a second paradigm altogether—a hysterokinetic neuter $\hat{k}r-éh_2$ (§ 35). In addition, it is attractive

³² Eichner (*MSS* 31, 72) argues that the PIE sequences $h_2\bar{e}$ and $\bar{e}h_2$ are reflected by Hittite *he* and *eh* respectively. If so, one would conclude that long *e* was not colored by an adjacent h_2 during the history of PIE itself. But nothing seems to stand in the way of supposing that in some other branch(es) of the family the coloring in question did take place before the laryngeal was lost. In particular, I know of no conclusive evidence against a development: PIE $\bar{e}h_2$ > proto-Gk. $\bar{a}h_2$ > \bar{a} .

An amphikinetic $\hat{k}(r)r-\bar{o}h_2$ as the source of $\kappa\acute{\alpha}\rho\alpha$, $\kappa\eta\eta$ - etc. would involve unnecessary phonological complications and analogies, and would also require specific reasons for thinking that a nom.-acc. with the structure zero root plus \bar{o} suffix (e.g. $\bar{u}\bar{o}\omega\eta$) does not always simply owe its root vocalism to the oblique stem by levelling—such levelling is more than usually difficult to invoke in this case. But in the last analysis, it does not make a great deal of difference. If an amphikinetic reconstruction is insisted upon for any reason, it would only mean a pair $\hat{k}ér-h_2$: $\hat{k}(r)r-\bar{o}h_2$ comparable to $h_2erh_3-\bar{u}\bar{r}$ / $-\bar{u}en$ - : $h_2erh_3-\bar{u}\bar{o}n$ (OIr. *arbor/arbae* 'grain' : Arm. *harawown* (\hat{k}) 'arable land') rather than to $-m\bar{u}\bar{r}$: $-m\bar{e}n$ or $-\bar{u}\bar{r}$ / $-\bar{u}en$ - : $-\bar{u}\bar{e}r$ (§ 34.2), as will be suggested just below (§ 36).

to see this second item ($\acute{k}r-éh_2$ 'head') specifically as a (suffixless) collective derivative of the first ($\acute{k}ér-h_2$ 'head-bone (substance)'), since this is strongly suggested by the parallel $\acute{k}ér-h_2$ (Myc. *kerā*) → $\acute{k}ēr h_2-o-$ 'head' (L. *cer(nuus)* / Av. *sāra-* §§ 33.7). But it has also been noted (§ 34.5) that a proterokinetic substantive that makes a hystero kinetic collective is precisely a pairing that can be paralleled. And in fact, a hystero kinetic collective would seem never to be the collective of anything other than a proterokinetic non-collective. These four conclusions, each of which can be reached without reference to the others, thus tend to support one another in the internally consistent view they provide when combined.

36.2 Furthermore, the assumption of a derivational process $\acute{k}ér-h_2$ 'head-bone (material)' → $\acute{k}r-éh_2$ 'the head-bone (collective)' is not only consistent with what can be independently concluded from the relevant material along formal lines, but also finds a series of rather precise semantic parallels. With a fair degree of regularity, PIE seems to have derived a suffixless neuter collective from a non-collective that denotes a substance (or is at least a mass noun), and is itself therefore already "collective" in a sense.³³ Among natural, organic substances, one thinks of $h_1 ésh_2-r$ 'blood' (Hitt. *e-eš-har* / Gk. ἥαρ Hsch.) : collective $h_1 ésh_2-ōr$ (Toch. A *ysār* / B *yasar*), or $sók-r$ 'excrement' (Hitt. *šakkar*) : collective $s(e) \acute{k}-ōr$ (Gk. σῶκω). More generally, there is the substance $uód-r$ 'water', of course, (Hitt. *ua-a-tar*) : collective $uédōr$ (Gk. ὕδωρ), and the mass noun $séh_1-mṇ$ 'seed' (L. *semen*) : collective $s(e)h_1-mén$ (OCS *sěmę*).³⁴ Against the background of pairs of this sort, it is not very re-

³³ Cf. § 34.2. The point to be emphasized at the moment, however, is that substantives that denote something that is already non-countable seem to have been particularly liable to form suffixless collective derivatives.

³⁴ The *-mēn* of OCS *sěmę* is not itself very probative in this regard, of course, since neuter *men*-stems in Slavic have given up proterokinetic non-collective inflection (nom.-acc. *-mṇ*) in favor of hystero kinetic inflection (countable or not) of the *men*-stem in question. What is to be retained here is only the probability (furnished by parallels in the comparative evidence) that the original distinction between the inflection with nom.-acc. *-mṇ* and inflection with nom.-acc. *-mēn* was one of non-collective (or not specifically collective) and collective. Further, one might wonder whether the co-existence of a non-countable *-mṇ* and a (practically synonymous) *-mēn* in a certain number of instances might not have played some part in favoring the general replacement of the *-mṇ* type by the *-mēn* type in Slavic.

If Hitt. *haštai* 'bone' reflects $h_2 estōi$, and if this was originally formed as an amphikinetic collective to an *i*-stem of another type (acrostatic or proterokinetic) that itself could mean 'bone (material)' (whether or not it could also name the object), then *haštai* would also belong here.

markable that a proterokinetic $\hat{k}\acute{e}r-h_2$, if it meant 'bony substance of the head', should have made a suffixless neuter collective $\hat{k}r-\acute{e}h_2$ (hystero-kinetic). The only additional assumption required is that this collective then became a word for 'skull, head'. But this is itself supported by the interpretation of $\hat{k}\acute{e}r-h_2-o-$ 'head' as another type of collective derived from the very same $\hat{k}\acute{e}r-h_2$ (§ 33.7).

37.1 There is, however, one apparent difficulty in the reconstruction of the items (and process) $\hat{k}\acute{e}r-h_2$ 'head-bone (substance)' \rightarrow $\hat{k}r-\acute{e}h_2$ 'the head-bone (collective)' $>$ 'skull, head'. Namely, the non-collectives from which these neuter collectives in $-\acute{e}C/-\acute{o}C$ are derived are always themselves neuter (neut. $\mu\acute{o}d\gamma \rightarrow$ neut. $\mu\acute{e}d\acute{o}r$ etc.). But the proterokinetic $\hat{k}\acute{e}r-h_2$ that appears to underlie Myc. *kerā* and Hitt. *karā-uar* seems to have become a "normal" \bar{a} -stem in both languages, and is therefore all but certain to have been feminine (§§ 11.2, 14.1).

On the one hand, it could theoretically be supposed that PIE once made suffixless neuter collective derivatives to non-neuter non-collectives. But this would force one to assume in addition not only that this procedure was given up at some point, but also that the neuter collectives that had already been produced from non-neuter derivational bases were all eliminated—precisely because their derivational bases were not neuter. This does not seem very plausible. [*]

37.2 Alternatively, one could explore the possibility that proterokinetic $\hat{k}\acute{e}r-h_2$ 'head-bone (substance)' was neuter at the time when its collective derivative $\hat{k}r-\acute{e}h_2$ was formed to it. This would simply mean that $\hat{k}\acute{e}r-h_2$ subsequently became feminine, while $\hat{k}r-\acute{e}h_2$ did not. The retention of neuter gender only by $\hat{k}r\acute{e}h_2$ is not itself particularly proble-

The Latin neuter *ador* 'spelt' (cf. Watkins, *HSCP* 77, 187 ff.; 79, 181 ff.) vacillates between *adōr-* and *adōr-* as the oblique stem. Since a change from $-\acute{o}r-$ to $-\acute{ō}r-$ in a neuter oblique is immediately understandable (by invoking the model of *corpōr-*, *tempōr-* etc.), while the reverse ($-\acute{ō}r-$ replaced by $-\acute{o}r-$) would be inexplicable, the oblique was probably *adōr-* originally, and this points to a Latin paradigm *adōr/adōr-is* etc. Before rhotacism, the nominative was therefore either *adōs* or *adōr*, both with a structure pointing to a neuter collective. Of the two possibilities, *adōr* is the better choice since it can be interpreted as the nom.-acc. of an amphikinetic r/n -stem (\rightarrow Latin r -stem) and thus paralleled by Gk. $\sigma\alpha\acute{\omega}\rho$, $\upsilon\delta\acute{\omega}\rho$ etc. There seem to be no parallels anywhere for a neuter amphikinetic s -stem (nom.-acc. $-\acute{o}s$) that inflects as a singular. In any case, a neuter $h_2ed-\acute{o}r$ 'spelt' ($<$ $*\text{dry stuff}$ —Watkins *opp. citt.*) would also figure as an example of a collective made to a substantive that must have been semantically non-countable even as a non-collective, although the non-collective is not securely attested anywhere.

matical, since it may always be assumed to have acquired both the specialized meaning 'skull, head' (§ 36.2) and an irregular paradigm (characteristic of neuter body-part terms—cf. III c) by the time its derivational basis $\hat{k}ér-h_2$ (from which it had thus been dissociated) changed from neuter to feminine.

What remains, then, is only the question of whether there is positive support for the view that a neuter h_2 -stem, inflected as a singular (namely $\hat{k}ér-h_2$ /obl. $\hat{k}r-éh_2$ -) became a feminine h_2 -stem already in the protolanguage. When put in these terms, the question gets a clear orientation, and the formation under discussion gets an entire series of potential parallels. For we are now in the area of feminine gender for substantives with the suffix $-h_2$ - vs. neuter gender for the nom.-acc. plural ending $-h_2$, items which, according to the *communis opinio*, are ultimately identical or at least intimately related.

37.3 In its broad outlines, the traditional view on this question goes back to the analysis proposed by Johannes Schmidt.³⁵ Schmidt argued that there is ultimately no essential difference between forms like the AV n-a pl. $varšá(ñi)$ 'the rains' (sg. RV $varšám$ 'rain') and the AV fem. nom. sg. $varšá$ 'rainy season' (cf. Gk. $\acute{\epsilon}\acute{\epsilon}\rho\sigma\eta$ / $\acute{\alpha}\acute{\epsilon}\rho\sigma\eta$ / $\acute{\alpha}\epsilon\rho\sigma\alpha$ 'dew'). In his view, the earliest state of affairs was one in which the suffix $-(e)h_2$,³⁶ added to substantival stems, simply produced feminine collective derivatives, inflected as singulars, that were h_2 -stems throughout their paradigms. In the case of $varšám$ etc., there would be, at the earliest stage, only a non-collective (or not specifically collective) neuter $h_2u\acute{e}rso$ - beside a feminine collective $h_2u\acute{e}rse-h_2$.

For Schmidt, the derived collective is continued basically unchanged by substantives with feminine gender, collective function, singular inflection, and suffixal $-h_2$ - throughout the paradigm (type $h_2u\acute{e}rse-h_2$ / $h_2u\acute{e}rse-h_2-es$ etc. f. > $\acute{\alpha}\epsilon\rho\sigma\alpha$ / $varšá$). But this same derived collective, he continues, was pragmatically equivalent to a true plural in many cases (typologically, he compares, e.g., the use of the abstract *iuuen-tas* / *-tus* in the sense of *iuuenes* in Latin³⁷). In addition, the $-h_2$ -

³⁵ Schmidt *Neutra*, 21 ff., 42 ff., 54 ff.

³⁶ Schmidt's reconstructions (both of this suffix and of other items) have been "updated" in this summary.

³⁷ Schmidt *Neutra*, 12 ff. One misses in Schmidt's presentation some explicit discussion of how and why an adjectival abstract comes to be used as a collective for the group to whose members the adjective can be applied (or for the group that can be denoted by the substantivized plural of that adjective)—e.g. Latin *paupertas* = *pauperes*, *iuuentus* = *iuuenes*.

collective feminine was most often derived, according to Schmidt, from non-collectives that were themselves neuter,³⁸ and neuters had no real plural in the first instance. As a result, the feminine derivative came to be used (still with its formally singular paradigm $-h_2 / -h_2-es$ etc.) as a substitute for a true plural of the neuter from which it had been derived – thus sg. $\acute{i}ugom / \acute{i}ugos\acute{i}o$ etc. 'yoke' : "pl." $\acute{i}uge-h_2 / \acute{i}uge-h_2-es$ etc. '(collection of) yokes'. Since oblique neuter case forms were identical to those of masculines of the same stem formation in the singular and dual, however, the next step in the development was the analogical replacement of oblique "plural" $\acute{i}uge-h_2-es$ etc. by $\acute{i}ug\acute{o}m$ etc. (i.e. m. sg. $\acute{e}k\mu\acute{o}s\acute{i}o$ etc. : neut. sg. $\acute{i}ugos\acute{i}o$ etc. = m. pl. $\acute{e}k\mu\acute{o}m$ etc. : neut. pl. X = $\acute{i}ug\acute{o}m$ etc.). The contrast between m. sg. $-os$ and neut. sg. $-om$ in the nominative, however, allowed for a contrast in the nominative plurals, and $-e-h_2$ in the neuter was thus retained.³⁹ In short, $\acute{i}uge-h_2 / \acute{i}uge-h_2-es$ etc. (fem.) was transformed to $\acute{i}uge-h_2 / \acute{i}ug\acute{o}m$ as the plural corresponding to $\acute{i}ugom$, and it was only at this point and in this function, that $\acute{i}uge-h_2$ became neuter.⁴⁰ As a result, it also became the accusative. The original (collective) singular status of the neuter nominative plural, however, continues to be reflected in its use with a singular verb in Greek ($\tau\acute{\alpha} \zeta\acute{\omega}\alpha \tau\rho\acute{\epsilon}\chi\epsilon\iota$), Vedic, and Avestan.⁴¹ In short, the PIE nom.-acc. neuter plurals with the ending $-h_2$ (for Schmidt, only $-e-h_2$, $-i-h_2$, $-u-h_2$; not $-C-h_2$) are, as a type, re-analyzed feminine singular collective derivatives with the suffix $-h_2$, and this is why the same formations ($-e-h_2$, $-i-h_2$, $-u-h_2$) that function as neuter plurals are formed as feminine singulars as well.⁴²

37.4 At the same time, Schmidt heavily emphasizes the point that there is no real distinction to be made between collectives (that have become neuter plurals) derived by means of the suffix $-h_2$ - and those derived without suffix (§§ 34.2 ff.).⁴³ Instead, there is only a complementary distribution here. The o -, i -, and u -stems use $-h_2$ -, while consonant stems undergo changes of inflectional ablaut in forming deriva-

³⁸ Schmidt *Neutra*, 10.

³⁹ Schmidt *Neutra*, 10.

⁴⁰ Schmidt *Neutra*, 10.

⁴¹ Schmidt *Neutra*, 4; J.S. Speyer, *Vedische und Sanskrit-Syntax*, 75 note 1; B. Delbrück, *Altindische Syntax* (= *Syntaktische Forschungen* 5), 83. The phenomenon is very rare in Vedic. For instances in Avestan, Schmidt *Neutra*, 4; Reichelt, *Awestisches Elementarbuch*, 300 f. There are also apparent examples in Hittite.

⁴² Schmidt *Neutra*, e.g. 35, 75 and *passim*.

⁴³ Schmidt *Neutra*, 75, 96 f., 135, 141, 214 etc.

tives with collective function. And just as collective derivatives in $-h_2$ are found both as singulars ($h_2\mu\epsilon\rho\sigma\epsilon-h_2$ > ἄεϋσα) and as nom.-acc. plurals ($\varphi\alpha\varsigma\acute{\alpha}-\eta\iota$), the same is true of suffixless derivatives ($\mu(e)d\acute{o}r$ > sg. ὕδωρ, pl. Hitt. *úidār*).⁴⁴

In fact, Schmidt goes a step further. On the basis of his observation that h_2 -collectives, when singular, are feminine, Schmidt points to the fact that formations in $-\bar{e}C/-\bar{o}C$ are found both as nom.-acc. neut. plurals (e.g. Av. $-\acute{a}$ < $-\bar{o}s$) and as fem. nom. singulars (e.g. Gk. $*\alpha\eta\eta\acute{o}s$ > Hom. ἠώς etc. f. 'dawn'), and concludes that just as fem. singulars in $-h_2$ - with collective function ($-e-h_2$, $-i-h_2$, $-u-h_2$) were installed as nom.-acc. plurals in neuter paradigms (§ 37.3 above), so were (collective) feminine singulars in $-\bar{e}C/-\bar{o}C$.⁴⁵ In other words, the two types of neuter plurals ($-h_2$ and $-\bar{e}C/-\bar{o}C$) are the further special uses of two types of feminine derivatives with collective function and singular paradigms in the first instance. Neuter plurals in $-\bar{o}r$ (Av. *aiiārē*, Hitt. *úidār*), $-\bar{o}s$ (Av. *manā*), $-\bar{m}ōn$ (Ved. $-\bar{m}ān(i)$, Av. *man*) etc. would thus be original fem. nom. singulars.

37.5.1 At this point, however, serious questions can be raised. The pattern displayed by neut. $s\acute{i}uH-m\eta$: masc. $s(\acute{i})uH-mēn$ (Ved. *syúma* : Gk. ὕμην), neut. $k\acute{r}é\mu h_2-s$: masc. $k\acute{r}u h_2-\bar{o}s$ (Ved. *kravīh*/Gk. κρέας : L. *cruor*), neut. $s(e)h_2\mu\acute{o}l$: masc. $sh_2\mu\acute{o}l$ (Ved. *svār*/Av. *humarā* : L. *sōl*) etc., with neuters beside masculines,⁴⁶ is not really parallel to neut. $h_2\mu\epsilon\rho\sigma\epsilon-m$: fem. $h_2\mu\epsilon\rho\sigma\epsilon-h_2$ (Ved. *varṣām* : Gk. ἄεϋσα). But even if one were to grant for the sake of argument that neut. $s(e)h_2\mu\acute{o}l$, for example, had a non-neuter, singular collective $s(e)h_2\mu\acute{o}l$ just as neuter $h_2\mu\epsilon\rho\sigma\epsilon$ had a non-neuter, singular collective $h_2\mu\epsilon\rho\sigma\epsilon-h_2$, the situation would still not be symmetrical, since the singular collectives in $-\bar{e}C/-\bar{o}C$ would include both (putative) non-neuters ($s(e)h_2\mu\acute{o}l$) and neuters ($\mu(e)d\acute{o}r$ > ὕδωρ), while h_2 -stem singular collectives are feminine only. If, as Schmidt insists, the h_2 -stem collectives and the $-\bar{e}C/-\bar{o}C$ collectives were really completely parallel at first, the asymmetry in their usual genders (fem. $-h_2$ vs. masc./neut./rare fem. $-\bar{e}C/-\bar{o}C$) would suggest

⁴⁴ Hitt. *úidār* is of course not Schmidt's example of a suffixless derivative that yields an eventual plural. He uses the PIE adjectival nom.-acc. pl. $k^{\#}et\mu\acute{o}r$ 'four', with the additional argument that this adjectival formation presupposes a substantival neuter nom.-acc. pl. in $-\bar{o}r$ (*Neutra*, 192).

⁴⁵ Schmidt *Neutra*, 96 f. etc.

⁴⁶ Schmidt considers masculine singulars like ὕμην and *cruor* original fem. collectives that have switched to masc. (cf. *Neutra*, 90 ff., 144 f.).

one of two things. Either $\mu ed-ōr$ (ῥδωρ) and $sh_1-mēn$ (OCS *sěmę*), for instance, were once non-neuters (cf. $sh_2-\mu ol$ > L. *sōl* and $s(i)uH-mēn$ > ὕμην) that have become neuter (which is unlikely, as we will see shortly), or else some h_2 -stem singular collectives were neuter and became feminine. This would amount to a $h_2\mu erse-h_2$, for example, that was once neuter (like $\mu edōr$), but changed to feminine (AV *varṣā*/Gk. ἄερσα).

37.5.2 Furthermore, Schmidt's general scheme requires any given type of $-ēC/-ōC$ singular collective (just as was the case with the h_2 -collective—§ 37.3) to acquire neuter gender only by virtue of having been installed (as a nom.-acc. neut. pl.) in a neuter paradigm⁴⁷ (since all such collectives were originally feminine in his view). But this means that $-ēC/-ōC$ neuter singulars (ῥδωρ, OCS *sěmę* etc.), as a type, were feminine singular collectives that were used as plurals to neuter singulars, and thus became neuter, but still kept (or regained?) the singular status they originally had as collectives.⁴⁸ This makes for a view of neuter singulars like Goth. *namō* 'name' ($-mōn$)⁴⁹ or OCS *sěmę* 'seed' ($-mēn$) that is at least cumbersome. But in the case of the neut. singulars reflected by Gk. ῥδωρ and σκῶρ 'excrement' or Toch. A *ysār*/B *yasar* ($-ōr$) 'blood', the assumption of a collective that was originally feminine is practically impossible. It seems safest to assume that r -stem

⁴⁷ Schmidt *Neutra*, 89 ff., 97, 210 f.

⁴⁸ In some cases where an $-ēC/-ōC$ formation is synchronically singular and non-neuter (usually masc.), Schmidt apparently sees simply the old fem. collective singular kept intact except that it has switched to masculine directly (for reasons given *Neutra*, 95 ff. —esp. 97, 210 f.; cf. 144 f.).

⁴⁹ Schmidt's general view makes neut. singulars in $-ēC/-ōC$ difficult to deal with because, on the face of it, one would have to view such forms as ultimately representing fem. sg. collective derivatives of neuters that were installed as plurals of those neuters and only then became neuter themselves before reverting to singular status. Schmidt explicitly takes the Lithuanian type represented by *stomuō* 'stature' as the outcome of a complicated development of this kind (*Neutra*, 91 f.)—except that the neuter plural became masculine as a singular. Schmidt then also says (*Neutra*, 92) that the Gmc. languages 'stehen auf derselben Stufe wie das Litauische'—implying that the masc. singulars he mentions there (e.g. Goth. *hliuma* 'hearing', OHG *sāmo* 'seed'—and therefore *namo* 'name') are also singularized (and secondarily masc.) neuter plurals that in turn come from singular fem. collectives. For Goth. *namō*, however, Schmidt gives an entirely different explanation (*Neutra* 92, 120; 106 ff.; 111 ff.—esp. 117 ff.)—namely that it represents the old non-collective neut. singular with nom.-acc. analogically redone on the model of *augō* 'eye' and *ausō* 'ear', where the $-ō$ represents Gmc. $-ō-n$ < $-ā + n$. For the Slavic $-mę$ type, I find no explicit account at all (see *Neutra*, 90).

nominatives like $\mu(e)d-\bar{o}r$, $s(e)\acute{k}-\bar{o}r$ and $h_1esh_2-\bar{o}r$ went together with oblique n -stems already as singular collectives—i.e. even before $-\bar{e}C/-\bar{o}C$ collectives were installed as nom.-acc. plurals of other neuter formations. But it is difficult to imagine that singular $-\bar{o}r/-n$ -paradigms of such a sort were ever anything but neuter.

It follows that the derivational process of the type sg. neut. $\mu\acute{o}d\gamma$ → sg. neut. collective $\mu ed\bar{o}r$ both began with a neuter singular and produced another neuter singular. The same would go for the other r/n stems (neut. $so\acute{k}\gamma$ → neut. $se\acute{k}\bar{o}r$, neut. $h_1\acute{e}sh_2\gamma$ → neut. $h_1esh_2\bar{o}r$), and for the other singular neuters with nom.-acc. $-\bar{e}C/-\bar{o}C$ as well (neut. $seh_1-m\acute{n}\gamma$ → neut. $sh_1-m\bar{e}n$, neut. $h_1neh_3-m\acute{n}\gamma$ 'name' → neut. $h_1neh_3-m\bar{o}n$ > Goth. *namō*). Since Hitt. *úidār* 'waters' and Av. *aiiārē* 'days' make it clear that a derived neuter singular collective can become the neut. plural of the non-collective from which it was derived, one will also be inclined to interpret the s -stem nom.-acc. neut. plural in $-\bar{o}s$ (Av. *manā*) as the outcome of a nom.-acc. singular *neuter* collective too, even though $-\bar{o}s$ as a nom.-acc. singular occurs nowhere.

37.6.1 If, however, the nom.-acc. neut. plural in $-\bar{e}C/-\bar{o}C$ was originally a singular collective that was neuter and not feminine, the question of the gender of the singular collective in $-h_2$ that became the n -a neut. plural in $-h_2$ must be reopened.⁵⁰ In particular, there arises the question of whether one might not do better to assume that *both* types of singular collectives ($-h_2$ and $-\bar{e}C/-\bar{o}C$) were neuter singulars in the first instance. This question really deserves a treatment of its own, and that cannot reasonably be inserted here. We will therefore have to content ourselves with indicating, however tentatively, that there are certain advantages to viewing both the $\mu ed\bar{o}r$ and the $h_2\mu erse-h_2$ types of singular collectives as original *neuter* nominative-accusatives.

37.6.2 The idea of a neuter nom.(-acc.) singular of the structure, e.g., $h_2\mu erse-h_2$ is not an especially new one.⁵¹ Furthermore, it is implicit in the view⁵² that the nom.-acc. neuter plural type in $-\bar{o}r, -\bar{o}n$ etc. (e.g. Hitt. *úidār*, Av. *nāman* 'names') ultimately reflects (by way of $*-orr$, $*-onn$) an absolutely original $*-or-h_2$, $*-on-h_2$, with a hypothetical pho-

⁵⁰ Or rather opened. Feminine gender was a premise for Schmidt. His remark (*Neutra*, 8–9) that $-\bar{a}$ ($-e-h_2$) plurals cannot have been originally neuter because they were made also to masculines is the only mention of the possibility of non-feminine gender for h_2 -stem singulars in the whole book.

⁵¹ Meillet *Introduction*⁸, 284 f., 291 f.; Meillet-Vendryes *Traité*², 443 f. etc.

⁵² Szemerényi *Einführung*, 155, 159.

nological development parallel to that of masc./fem. nom. singular $-\bar{o}r$, $-\bar{o}n$ (e.g. $(dh)gh(e)m\bar{o}n$ 'earthling', $syes\bar{o}r$ 'sister') from $*-orr$, $*-onn$, and this from $*-or-s$, $*-on-s$.⁵³ In favor of deriving the neuter nom.-acc. plural $-\bar{o}r/-\bar{o}n$ from $*-or-h_2$ / $*-on-h_2$ is the consideration that it immediately explains why there should be two different-looking types of formations in the first place (pl. $\mu\acute{e}d\bar{o}r$ vs. pl. $h_2\mu\acute{e}rse-h_2$) that seem to be precisely parallel in their history and behavior:

1) They are both singulars with collective function that have become neuter plurals.

2) As neuter plural nominative-accusatives, they are both suppleted in the oblique. The h_2 -stem nom.-acc. $h_2\mu\acute{e}rse-h_2$ goes together with oblique forms lacking the $-h_2$ - (gen. $h_2\mu\acute{e}rs\bar{o}m$, loc. $h_2\mu\acute{e}rso\bar{i}su$ etc.). An amphikinetic nom.-acc. in $-(m)\bar{o}n$ (or hysterokinetic nom.-acc. in $-(m)\bar{e}n$) goes together with proterokinetic-looking oblique forms—e.g. RV nom.-acc. pl. $bráhmāṇ(i)$ 'prayers'/gen. $bráhmaṇām$ [*].

3) Both types continue to be used with a singular verb even after they have become nom.-acc. plural forms. One might hesitate to suppose that two altogether different formations both had the same original function (singular collectives) and have both undergone the same series of developments (switch to neuter plural with retention of singular value as regards agreement with a verb). There is thus some reason to take nom.-acc. plurals of the types $-\bar{o}r$, $-(m)\bar{o}n$ etc. as the outcomes of pre-PIE $*-or-h_2$, $*-(m)on-h_2$ etc., parallel to $-e-h_2$, $-i-h_2$ and $-u-h_2$ (as original singular collectives that have become nom.-acc. plurals).

But there is no real doubt that the Greek nom.-acc. singular $\upsilon\delta\omega\varrho$, for example, and the Hittite nom.-acc. plural $\acute{u}idār$ both continue a neuter collective originally inflected as a singular (§§ 37.3, 37.5). If, therefore, the nom.-acc. neut. singular in question goes back to $*\mu\acute{e}dor-h_2$ in the very first instance, we have a nom.-acc. neut. singular in $-h_2$.⁵⁴

37.7 Beyond this, it may be pointed out that the \bar{a} -stem nom.-acc. duals in Indo-Iranian, Balto-Slavic and Old Irish can all be traced back

⁵³ Szemerényi *Einführung*, 109.

⁵⁴ The $\mu\acute{e}d-or-h_2$ / $ud-n$ - thus implied would seem to have $-h_2$ only in the nom.-acc., and the question thus arises of whether it is to be considered a suffix that comes to be reflected only in the nom.-acc., or whether it was a desinence at first. My own view is that it always was a suffix, and that the $-\bar{o}r/-n$ - type of neuter paradigm (and the $-\bar{e}C$ / $-C$ - or $-\bar{o}C/-C$ - neuter type in general), which certainly existed already in the proto-language, was the result of certain analogical developments that took place relatively early on in PIE itself. This line cannot be followed up any further here, however.

to *-ai* (I-Ir. *-ai*, OCS *-e*, Lith. *-ie* > *-i*), for which the only meaningful further reconstruction is *-eh₂-iH* (cf. in particular the OIr. nom.-acc. dual *mnaí* 'two women' *gⁿn-eh₂-iH*).⁵⁵ But this means that the nom.-acc. dual ending *-iH* has a remarkable distribution:

1) neuters of all stem types (*h₃kⁿ-iH* 'the two eyes' > Arm. *ač(k')* cf. OCS *oči* etc.; *h₂us(s)-iH* 'the two ears' > Av. *uši* etc.; *ḡingo-ḡH* 'two yokes' > Ved. *yugé* etc.).

2) *ā*-stems (as above).

In short, it would seem that the *ā*-stems had the neuter dual ending already in PIE.⁵⁶

Furthermore, Old Irish *mnaí* 'two women', if directly from *gⁿn-eh₂-iH* as above, shows the dual ending *-iH* added not to the stem (*gⁿen-h₂*) that originally appeared in the nom. and acc. singular, but to the stem of the oblique singular (*gⁿn-eh₂-*). It is clear, however, that the nom.-acc. dual of masculine and feminine consonant stems had the stem-shape of the (nom. and) acc. singular in PIE (Ved. *nár-ā*/Gk. *ἀνέρ-ε* 'two men', Ved. *pitár-ā* 'parents'/Gk. *πατέρ-ε* cf. Ved. *dvār-ā* 'door', *pád-ā* 'two feet', *nás-ā* 'nose', *kṣám-ā* '(heaven and) earth', *brahmán-ā* 'two priests', *rājān-au* 'two rulers' etc.). Neuter nom.-acc. duals, on the other hand, had the ending *-iH* either

⁵⁵ It has been proposed by Szemerényi (*Proceedings of the Cambridge Colloquium on Mycenaean Studies*, ed. L. R. Palmer and J. Chadwick, 217 ff.) that *ā*-stems in PIE had a nom.-acc. dual in *-oi* that is reflected not only in I-Ir *-ai* etc., but in Myc. *ā*-stem duals of the type *i-qi-jo* 'two chariots' as well. This amounts to saying that PIE stems in *-e-h₂* made a dual in *-o-iH*, i.e. not from the stem (*-e-h₂*) that ran through the rest of the paradigm, but from the *o/e*-stem from which the *-e-h₂*-stem itself was derived. It would be extremely difficult on general principles to justify a preference for such an unusual state of affairs in PIE over the far more straightforward and practically unavoidable reconstruction *-eh₂-iH* for the *ā*-stem dual, and Szemerényi offers no positive argument against the traditional view, remarking only that *-eh₂-iH* is "... an assumption that may be attractive, but is not necessarily true." Furthermore, the reconstruction of nom. sg. *-e-h₂* : du. *-o-iH* would imply nom. sg. *-h₂* : du. *-iH*. But the only word that allows this implication to be tested (PIE *gⁿen-h₂* 'woman') would go far toward falsifying it (barring further hypothetical and rather complicated analogies), since a **gⁿ(e)n-iH* cannot be the source of OIr *mnaí* 'two women'. Finally, there does not appear to be the slightest indication that would favor the reading *-oi* over *-ō* in any positive way for the Myc. duals of the *i-qi-jo* type in the first place (cf. Lejeune, *RPh* 42, 234 ff. = *Mémoires de philologie mycénienne* III, Chapter 58, 275 ff.).

⁵⁶ I would like to thank Warren Cowgill for reminding me of these forms in this context.

1) added to the same stem-shape as is found in the oblique singular (Ved. abl. sg. *sádman-as* 'seat, locale' : dual *sádman-ī* / OCS *-men-i* for the proterokinetic neuter *-men-stems*⁵⁷)

or 2) added to a super-reduced stem ($h_2us-s-iH$ 'the two ears' > Av. *ušī*, $\hat{u}iH-dk̑mt-iH$ '20' > L. *uīginti*, Av. *visaiti*). In any case, the neuter nom.-acc. dual was not made on the stem of the neuter nom.-acc. singular, and the masc. and fem. nom.-acc. dual was not made on the stem of the corresponding oblique singular. The dual g^n-e-h_2-iH thus not only has the neuter ending, but also the stem structure of neuter rather than masc. and fem. nom.-acc. duals. [*]

In addition, the "normal" feminine \bar{a} -stems are the only masc. or fem. type to combine zero grade suffix and absence of *-s* in the nom. singular.⁵⁸ This structure is otherwise found only among neuters.⁵⁹

While these considerations do not justify the conclusion that the h_2 -stems as a whole were once *all* neuter, it does suggest strongly that *some* h_2 -stems in PIE were once neuters. At the same time, the recognition of neuters among the h_2 -stems in early PIE would do away with the necessity of seeing an atypical situation here—the limitation of a given suffix to formations of only one gender. But if there were some h_2 -stems that were neuter, an obvious group of candidates for inclusion among neuters in $-h_2$ are the h_2 -stem collective derivatives whose nominative-accusatives became the neuter pl. nominative-accusatives of their respective derivational bases already in the protolanguage, just as derived neuter collectives in $-\bar{e}C/-\bar{o}C$ did.

⁵⁷ Even the Vedic neuters of the structure $C\bar{a}-man-$ (which adopted the structure $C\bar{a}-mn-$ in the oblique singular—§ 49.2) have duals of the structure $C\bar{a}-man-ī$ ($dh\bar{a}manī$, $s\bar{a}manī$ vs. $dh\bar{a}mn-\bar{a}$, $-e$; $s\bar{a}mn-\bar{a}$) for the most part (but $n\bar{a}mn-\bar{a}$, $-e$, $-as$: AV du. $n\bar{a}mn-ī$). Duals like $dh\bar{a}man-ī$ are presumably an archaism, dating from before the replacement of singular oblique $C\bar{a}-man-$ by $C\bar{a}-mn-$ in these neuters. The reason for the preservation of $dh\bar{a}man-ī$ and $s\bar{a}man-ī$ (vs. newer $n\bar{a}mn-ī$) is perhaps that the nom.-acc. dual came to be synchronically derived from the nom.-acc. plural ($-m\bar{a}(ni)$: $-manī$), and since not even $C\bar{a}-man-$ neuters made any change in the structure of the nom.-acc. pl. ($dh\bar{a}māni$, $n\bar{a}mā$, $dh\bar{a}ma$ like $s\bar{a}dmāni$, $s\bar{a}dmā$, $dh\bar{a}rma$), there was no change in the nom.-acc. dual either. That a synchronic pattern of nom.-acc. pl. $-\bar{a}(ni)$: nom.-acc. du $-anī$ (and not, say, nom.-acc. sg. $-a$: nom.-acc. du. $-anī$) was real and perceived as normal is indicated by RV nom.-acc. pl. $\acute{a}h\bar{a}(ni)$: du. $\acute{a}hanī$ (vs. nom.-acc. sg. $\acute{a}har$), where the dual $\acute{a}han-ī$ has apparently replaced an $*\acute{a}hn-$ (cf. oblique sg. $\acute{a}hn-$). So also AV $c\acute{a}kṣan-ī$, $doṣān-ī$.

⁵⁸ That is to say, other than feminines in $-ih_2$. But this can hardly be considered a second and independent instance.

⁵⁹ I would again like to thank Warren Cowgill for pointing out to me the relevance of this fact to the question under discussion.

37.8 To summarize, it may be suggested that we should recognize neuter nom.-acc. sing. collective formations of the types $*\mu ed-or-h_2$ (> $\mu(e)d-\bar{o}r$ > $\acute{\upsilon}\delta\omega\rho$), $*sh_1-men-h_2$ (> $s(e)h_1-m\bar{e}n$ > OCS $sěmę$) etc., with a $-h_2$ formant that is ultimately identifiable with the $-h_2$ suffix of singular collective formations of the type $h_2\mu erse-h_2$ (> $\acute{\alpha}\epsilon\rho\sigma\alpha$), and that both types ($*-or-h_2$ / $*-en-h_2$ and $-e-h_2$ / $-i-h_2$ / $-u-h_2$) eventually became nom.-acc. plural formations that continued, however, to be used with singular verbs. But however this may be, a singular collective of the type $\mu ed-\bar{o}r$ / $ud-(e)n-$, with neuter gender from the beginning, is practically unavoidable. Whether or not, therefore, one wishes to take singular $\mu ed-\bar{o}r$ from an earlier $*\mu ed-or-h_2$, the eventual use of the sg. neut. collective $\mu ed\bar{o}r$ as the nom.-acc. neut. plural of its own derivational base ($\mu od\bar{r}$) makes it attractive to give $h_2\mu erse-h_2$ (which is also a singular collective eventually used as the nom.-acc. neut. pl. of its own derivational base $h_2\mu erso-$) as parallel an interpretation as possible. And this suggests seeing the singular collective $h_2\mu erse-h_2$ as an original neuter. This, in turn, explains at the same time why $-h_2$ -stems share certain morphological features with neuters (asigmatic nom. sg., the ending of the nom.-acc. dual, the stem structure seen in $g^n n-eh_2-iH$ > OIr. $mnaí$).

37.9 As an overall view of the matter, one could consider a hypothesis of the following kind. The h_2 -stem collectives, either alone or among other h_2 -stems, were originally neuter in PIE. At some point after they had begun to function not only as singular substantives ($h_2\mu erse-h_2$ / $h_2\mu erse-h_2-es$, neut., 'rains'), but also (in the nom.-acc.) as the nom.-acc. neut. plurals of their own derivational bases (sg. $h_2\mu erso-m$: pl. $h_2\mu erse-h_2$, gen. $h_2\mu ers\bar{o}m$ etc.), they changed gender, as singulars, to feminine by being absorbed into the (larger?) category of formations in which a suffix $-h_2$ functioned entirely differently, and often specifically as a marker of feminine gender: $s\mu ek\bar{u}r-h_2-$ (> $s\mu ekruh_2-$ > RV $\acute{s}vaśrū-$) 'mother-in-law' fem. vs. $s\mu ekur-o-$ (> RV $\acute{s}vaśura-$ etc.) 'father-in-law' masc.; masc./neut. $ne\mu o-$ 'new' → fem. $ne\mu e-h_2$ 'id' etc.; $g^n en-h_2$ / $g^n n-eh_2-$ 'woman'; etc. But although the singular h_2 -stem collectives took on the feminine gender of the others (with which they now made up a single formal type), their nom.-acc. dual ending $-iH$ and (with very few exceptions) their asigmatic nominative singular were generalized throughout the whole (now unitary) feminine h_2 -stem class.

37.10.1 If, at any rate, we are entitled to suppose that the h_2 -stem collectives, as singulars, were once a neuter type, there is no longer any difficulty with any aspect of the picture presented by a reconstructed

proterokinetic $\hat{k}ér-h_2$ (Myc. *kerā*, Hitt. *karā-uar*) 'head-bone (substance)' beside a hysterokinetic $\hat{k}ér-éh_2$ 'skull, head'. It was suggested above (§§ 11, 15 no. 4, 33.9) that the contrast in meaning between $\hat{k}ór-u-$ / $\hat{k}(e)r-n(o)-$ 'head-bone, horn (object)' and $\hat{k}ér-h_2$ 'head-bone (substance)' provides at least some grounds for identifying the $-h_2-$ of $\hat{k}ér-h_2$ specifically as the collective suffix. This formation, in other words, would originally have belonged with singular collectives of the type $h_2uérse-h_2$: a type which, if put parallel to the type $uédōr$ (possibly < * $uédor-h_2$), may well have been neuter to begin with. If there is any distinction at all to be drawn between the singular collective $\hat{k}ér-h_2$ and singular collectives like $h_2uérse-h_2$, it is merely either that $\hat{k}ér-h_2$ was a primary formation (while $h_2uérse-h_2$ was unambiguously a derivative of $h_2uérso-$), or else that there happens to be no reliable trace of any root noun $\hat{k}ēr-/kōr-$ from which $\hat{k}ér-h_2$ might have been derived in the very first instance (while $h_2uérso-$ is continued by Ved. *varṣám*). In either case, the singular h_2 -stem $\hat{k}ér-h_2/\hat{k}ér-éh_2-$ could still have showed inflectional ablaut in PIE, while $h_2uérse-h_2$ had suffixal zero grade throughout, a feature that seems to have characterized all h_2 -stems derived from thematic formations.

37.10.2 Starting from a neuter $\hat{k}ér-h_2$, where the formation in $-h_2-$ provided a mass noun 'head-bone (substance)' beside concrete $\hat{k}ór-u-$ and $\hat{k}(e)r-n(o)-$ 'head-bone (object)', the relationships among the various forms in which we are interested could be specified as follows. The proterokinetic neuter $\hat{k}ér-h_2$ 'bony substance of the head' (Myc. *kerā*, Hitt. *karā-uar*) served as the basis of two collective derivatives. On the one hand there was the process neut. $\hat{k}ér-h_2 \rightarrow$ neut. (?) $\hat{k}ēr_h_2-o-$ (cf. Ved. *pārsu-* 'rib': neut. *pārsū-á-* 'side' § 33.7), and on the other there was neut. $\hat{k}ér-h_2 \rightarrow$ neut. $\hat{k}ér-éh_2$ (cf. neut. $-mṇ \rightarrow$ neut. $-mēn$, neut. $-uṛ \rightarrow$ neut. $-uēr$ § 39.2). Both derivatives meant 'the head-bone (collective)' in the first instance, and became words for 'skull' or 'head': $\hat{k}ēr_h_2-o- >$ Av. *sāra-*, L. *cer(nuus)*—§ 33; $\hat{k}ér-éh_2$ (or $\hat{k}ṛ-ēh_2$) > Gk. *κάρῶ* etc. If only we could be sure that an i -stem $h_2e/ost-i$ for 'bone' (Ved. *ásti*) is old enough, a remarkably close parallel would be furnished by $h_2e/ost-i$ 'bone' → coll. $h_2est-ōi$ (Hitt. *ḫaštai*) beside $h_2e/ost-i \rightarrow$ coll. $h_2ost-ēi-o-$ (Gk. *ὀστέον*).

In any case, the original locative of $\hat{k}ér-éh_2$ would have been $\hat{k}ér-eh_2$. This locative, involved in one or more adverbial "univerbations" (§ 26.8) of an early date, and thus reduced to $-\hat{k}ṛh_2$, may be reflected by Gk. *(ἐπ)καρ* and Hitt. *(kit)kar* (§ 28.5.3). Alternatively, the allomorph

Gk. -καρ/Hitt. -kar could have originated in one or more (possessive) compounds in the very first instance (§§ 26.10, 38.4). In either case, the reduced $\acute{k}r-h_2$ of any such adverbial expression(s) would have taken on an existence independent of that of the simplex $\acute{k}r-éh_2$ (cf. Gk. ἐγ-γυ(ς), ἄντι-γυ(ς) with no substantives γυ- or κ(ο)γυ- beside them at all in Greek). This $\acute{k}r-h_2$ could thus have been immune to whatever further developments affected the paradigm of $\acute{k}r-éh_2$ itself (IIIc).

Like all (collective) neut. singulars in $-h_2$ (h_2 verse- h_2 etc.), however, proterokinetic $\acute{k}ér-h_2$ / $\acute{k}r-éh_2$ - (or $\acute{k}r-éh_2$ -), the mass noun, became feminine already in the protolanguage (§ 37.9). And, with divergent leveling, an eventual PIE feminine $\acute{k}ér-h_2$ / $\acute{k}r-éh_2$ - resulted in Myc. *kerā* and Anatolian *k(a)ra-* (whence Hitt. *karā-uar*). Its (neut.) collective derivative $\acute{k}r-éh_2$, on the other hand (as will be suggested below in more detail – §§ 55 ff.), had become simply a neuter body-part term for 'skull, head', and joined the group of items made up of $\acute{k}érd$ 'heart' and in particular, $h_3ékh$ 'eye' and $h_2éu(s)-s$ 'ear', items with which $\acute{k}r-éh_2$ 'head' shared important further developments in any event. In other words, reasons will emerge for supposing that $\acute{k}r-éh_2$ / $\acute{k}r-h_2$ - 'skull, head' was re-analyzed in PIE as a neuter root noun.

Since $\acute{k}r-éh_2$, at this point, was

- 1) not a neut. nom.-acc. with a zero grade suffixal $-h_2$;
- 2) not necessarily even analyzable any longer as root $\acute{k}(e)r$ - plus suffix $-(e)h_2$;
- 3) not synchronically the collective of the mass noun $\acute{k}ér-h_2$;

it naturally did not follow the neuter $-h_2$ and $-e-h_2$ formations in their change to feminine gender.

38.1 A detail that remains to be touched upon is whether a proposed hysterokinetic formation in the word for 'head' can be aligned with the more marginal pieces of evidence that have been introduced. These include Indic $*śrā-ya-$ (§ 28.2) 'head' and the various forms taken by $\acute{k}arā$ in Greek compounds (§§ 22 ff.). The two major indications (simplex $\acute{k}arā$ and Gk. -καρ/Hitt. -kar) have just been discussed in this respect (§ 37.10.2). Indic $*śrā-ya-$ < $\acute{k}r-éh_2-iō-$ may be disposed of immediately. There can be no possible objection to seeing a hysterokinetic $\acute{k}r-éh_2$ as its derivational base. [*]

38.2 In Greek, the first members $\acute{k}rḗ$ -(δεμνον), $*\acute{k}rā$ -(πάλα) are phonologically ambiguous between $\acute{k}r-h_2$ - and $\acute{k}r-éh_2$ - (§ 24). But nothing really decisive comes from morphological considerations

either. Part of this point has already been made: a $\hat{k}ér-h_2-s\eta-$ underlying $\kappa\eta\eta-$ is improbable on internal Greek evidence (§ 24.3), and there is no reason to demand the (*n*-stem) oblique of a secondary heteroclitic in compounds in the first place (§ 26.13 in regard to second compound members). If, in the present case, the unextended stem is both morphologically admissible and phonologically preferable, it only remains to point out that either $\hat{k}ér-h_2-$ or $\hat{k}ér-éh_2-$ could be consistent with a hysterokinetic simplex. In the very first instance, one might expect $\hat{k}ér-éh_2$: $\hat{k}ér-h_2-$ (cf. $ph_2-tér$: ph_2-tr- in RV *pitṛ-śád-* 'remaining with the elders', $\mu\eta s-\acute{\eta}n$: $\mu\eta s-\eta-$ in RV *vīśa-manas-* 'strong-spirited' etc.). It is possible to see such a $\hat{k}ér-h_2-$ as the starting point for the admissibility of a $\kappa\eta\alpha-$ in Greek as a first member compounding form of $\kappa\alpha\eta\alpha$ that simply continued to have this status.⁶⁰ On the other hand, it cannot be completely excluded that $\kappa\eta\alpha-$ represents a relatively old innovation. That is, it could be recent enough to reflect the nom.-acc. simplex $\hat{k}ér-éh_2$ rather than the originally regular reduced $\hat{k}ér-h_2-$, but old enough to show the non-syllabic alternant (by Lindeman's Law). One might compare [*] a case like Hom. *πολύ-ρηνες* 'rich in lambs' with non-syllabic $-\mu\eta\acute{\epsilon}n-$ (as opposed to the $\mu\eta\acute{\epsilon}n$ > *Ἰαρήν* of the simplex), but also with \bar{e} -vocalism (presumably introduced from the simplex) rather than the *o*-vocalism that might have been expected on the basis of the inherited pattern⁶¹ *φρήν* : $\acute{\alpha}$ -*φρων*, Arm. *azn* 'race, people', pl. *azink'* (-en-es) : *t'agawor-azn* 'of royal blood', pl. *-azownk'* (-on-es), etc. In any case, a first compound member $\kappa\eta\alpha-$ / $\kappa\eta\eta-$ in Greek, whichever of these two interpretations is accepted, is consistent with a hysterokinetic simplex $\hat{k}ér-éh_2$ 'head'.

38.3 Neither the governing compound $\acute{\imath}\gamma-\kappa\eta\alpha$ 'brain' ($-\hat{k}ér(h_2)-o-$) nor its possible OPers. bahuvrihi analogue *fra-θara-* 'prominent' ($-\hat{k}érh_2-o-$ § 28.3) raises any obstacle to the reconstruction of a hysterokinetic simplex $\hat{k}ér-éh_2$ for 'head'. The pattern $\kappa\alpha\eta\alpha$ ($-\bar{e}C$) : $-\kappa\eta\alpha$ ($-C-o-$) is parallel to that of cases like $\alpha\acute{\imath}\theta\eta\rho$ 'sky' : $\bar{\upsilon}\pi-\alpha\acute{\imath}\theta\rho-\alpha\varsigma$ 'under the sky, in the open' among governing compounds, and $\hat{k}ér-éh_2$ is to the $\hat{k}érh_2-o-$ of the OPers. compound as, e.g., $\bar{g}h(i)\bar{z}-\bar{e}m$ 'winter' (L. *hiems*, Av. *ziia* / gen. *zamo*) is to the $-\bar{g}him-o-$ of possessive⁶² compounds like

⁶⁰ This does not, of course, necessarily mean that any of the actually attested Gk. compounds with $\kappa\eta\alpha-$ as first member must itself date from the time of that starting point.

⁶¹ e.g. W-D 2.1, 100f.; Schwyzler GG 1, 355, 449.

⁶² It is especially attractive to take compounds in $X-\bar{g}him-o-$ 'X winters old' specifically as possessives in view of the unambiguously possessive adjective $\mu\eta\tau\acute{\epsilon}\varsigma-\acute{\omicron}$ 'one year old' (: $\mu\eta\tau\acute{\epsilon}\varsigma-$ 'year' > Gk. $\acute{\epsilon}\tau\alpha\varsigma$), as in Skt. *vatsá-* 'calf'.

RV $\acute{s}atá-him-a-$ 'lasting a hundred winters' and L. $bīmus$ 'two years' old' (< $d̥i-ghim-o-$).⁶³

38.4 It was suggested above (§§ 26.8, 28.4 f.) that the $-k̑h_2$ of Gk. $(ἐπι)καρ$ 'headlong' and Hitt. $(kit)kar$ 'at the head' (the only reconstruction that can unite them) is probably best taken as the locative of $\hat{k}r-éh_2$ 'head' reduced from $\hat{k}reh_2$ to $-k̑h_2$ in one or more "univerbated" adverbial expressions of PIE date. At the same time, however, it must be admitted (§§ 26.10.1 f.) that it is at least thinkable that $ἐπι-καρ$ is the adverbialized nom.-acc. neuter of an old bahuvrihi (although this is scarcely possible for Hitt. $(kit)kar$).

It might, therefore, be worthwhile to see whether $-k̑h_2$ is formally in order as the neut. nom.-acc. sg. of such a compound. To be sure, the means of deciding what to expect in the first place are somewhat indirect and theoretical, but the stem-shape $-k̑h_2$ for this second member does turn out to conform to what might be predicted for a hysterokinetic simplex in the nom.-acc. neut. sg. of a bahuvrihi. Cases like (hysterokinetic) simplex $πατήρ$: (amphikinetic) bahuvrihi $\acute{\alpha}-πάτωρ$ etc. would suggest (hystero.) $\hat{k}réh_2$: (amphi.) $epi-\hat{k}rōh_2$ in theory. But this, of course, would be the animate nom. sg. and not the neuter nom.-acc. The neuter nom.-acc. that would have corresponded to animate $\hat{k}r-ōh_2$ can only be conjectured on the basis of paradigm like masc. participial $h_1(i)\check{i}-ōnt-$ (ἰών, RV $yán$ 'going') : neuter $h_1(i)\check{i}-nt$ (RV $yát$) or masc. $meġ-ōh_2-$ 'great' (RV acc. $mahām$, compounds in $mahā-$) : neut. $meġ-h_2$ (RV $māhi$, Gk. μέγα). Consequently $epi-\hat{k}r-h_2$ would be exactly what would be hypothetically expected in this case. In addition $-k̑h_2-$ would be expectable as the oblique of the masc., thus opening the possibility of a neuter in $-k̑h_2$ by paradigmatic levelling (cf. § 26.13). $ἐπι-καρ$ as a neuter bahuvrihi consequently poses no obstacle to a simplex $\hat{k}r-éh_2$.

39. The derivational pattern of this first layer of formations ($\hat{k}er$ + suffix) would thus appear to be as follows:

'head-bone(s): object(s)' $\hat{k}or-u-$ / $\hat{k}er-u-$	'head-bone: object' $\hat{k}(e)r-n(o)-$		'head-bone: material' $\hat{k}ér-h_2$ (protero.)
			↓
			$\hat{k}ēr-h_2-o-$ $\hat{k}r-éh_2$ (hystero.)
			'mass of head-bone, the head-bone (collective)' > 'skull, head'

⁶³ Cf. also pairs like Gk. $\acute{\alpha}ρην$ 'lamb' : $\acute{\upsilon}παρνος$ 'with a lamb underneath, suckling a lamb' (Eur. +), $\gammaαστήρ$ 'belly' : $\lambdaεπτόγαστρος$ 'small-bellied' (Hp.).

It is of some interest to note that only the evidence from Hittite both begins and ends with this simplest group of formations. There is an apparent reflex of $\hat{k}ér-h_2$ in $karā(yar)$ and of $\hat{k}r-éh_2$ in $(kit)kar$, and nothing else. For all the other IE languages that present any evidence at all bearing on the $\hat{k}er$ -family, there are further morphological developments to be taken into account. The question of the dialectal distribution of the various more complex formations will be kept in view throughout the remainder of the discussion.

III a. $\hat{k}ér-h_2-s$ 'horn' vs. $\hat{k}ér-h_2-os$ 'head'

40. The further derivatives of $\hat{k}ér-h_2$ 'head-bone (material)' and its suffixless collective $\hat{k}ér-éh_2$ present a complex picture both morphologically and semantically. The (seemingly) simplest of them are Greek $\kappaέρας$ 'horn (object)' and the Indo-Iranian forms with which it is standardly equated—Skt. *śīrah* and Av. *sarah-* 'head'. The impression left by the handbooks¹ is that $\kappaέρας$ and I-Ir. $*śīras$ both come from a single PIE s -stem whose root is a set by-form ($\hat{k}érh_2-$) of the root ($\hat{k}ér-$) that underlies the familiar u - and n -formations found in the words for 'horn' (I above). The picture presented by the evidence just considered (II a, b) and the hypotheses to which it points (II c), however, require that the traditional interpretation of the s -stem forms be re-worked.

41.1 The implicit assumption that a given nominal stem in the IE languages may easily denote both 'head' and 'horn' or may switch from one meaning to the other without further ado is untenable as soon as it becomes clear that this semantic distinction is systematically associated with morphological distinctions of one sort or another (difference in stem formation, addition of derivational morphology, distinctions in inflectional apophony). This point was made more than once in I and II above, and the details need not be repeated here. The general outlook was simply that since a disregard for the observable semantic distinctions never did lead to a systematic morphological picture in the first place, there was every reason to seek to align the semantic pattern of the formations consisting of $\hat{k}ér-$ plus one suffix with the observable morphological differences among them. This, in turn, did lead to a systematic morphological picture. Consequently it is not very appealing in the present case to ignore the fact that $\kappaέρας$ means 'horn' and *śīrah* means 'head' in order to equate the two formally by reconstructing a single s -stem paradigm underlying them both.

41.2 In fact, there would be certain morphological objections to be made to such a reconstruction even if the meanings were identical.

¹ e.g. Pokorny *IEW*, 574 f.; Frisk *GEW* 1, 827; Benveniste *Origines*, 32; etc. The comparison goes back to Schmidt *Neutra*, 364 and Danielsson (*Grammatische und Etymologische Studien* I, 32) in its explicit form.

While $\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$ reflects $\acute{k}\acute{e}r\text{-}h_2\text{-}s$, the Indo-Iranian s -stem is from $\acute{k}\acute{e}r\text{-}h_2\text{-}os$. These in turn must either be $R + S$ structures with a set root $\acute{k}(e)rh_2\text{-}$ and suffix $-(e)s\text{-}$ or $R + S_1 + S_2$ structures with root $\acute{k}(e)r\text{-}$ plus suffix $-(e)h_2\text{-}$ plus suffix $-(e)s\text{-}$. [*] From what has emerged so far, it is the second analysis that would be chosen. But even so, an I-Ir. $\acute{k}\acute{e}r\text{-}h_2\text{-}os$ would be very surprising.²

A $R + S$ formation $\acute{k}\acute{e}r\text{-}h_2\text{-}s/\acute{k}\acute{e}r\text{-}h_2\text{-}\acute{e}s\text{-}$ (proterokinetic) plus the assumption of divergent levelling to $\acute{k}\acute{e}r\text{-}h_2\text{-}s$ ($\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$) on the one hand and $\acute{k}\acute{e}r\text{-}h_2\text{-}os/es\text{-}$ on the other ($\acute{s}\acute{i}ras$) seems unobjectionable at first glance. But to judge by the available evidence (basically from Greek and Indo-Iranian itself), neuter s -stems made to $CeRH$ roots at an early stage constitute a recognizable sub-group showing the phonologically conditioned³ archaic shape $CeRH\text{-}s$. It is this stem-form (i.e. the original nom.-acc., and not something coming from the original oblique $CRH\text{-}es\text{-}$ ⁴) that has been generalized throughout the paradigm: Gathic $t\acute{a}nuis$ 'strength' < $teyH\text{-}s$, YAv. $stairis$ 'layer of straw' < $sterh_3\text{-}s$, Gk. $\gamma\acute{\epsilon}\rho\alpha\varsigma$ 'perquisite' < $\acute{g}erh_2\text{-}s$, and $\kappa\rho\acute{\epsilon}\alpha\varsigma$ '(piece of) flesh' = Skt. $krav\acute{i}h$ < $kreu\text{-}h_2\text{-}s$.⁵ If the data, as far as they go, are so clear on the generalization of $CeRH\text{-}s$ for I-Ir. in this small group of formations,⁶ and if in addition they correspond in this respect to the available comparable Greek forms, there is a strong possibility that the generalization of the nom.-acc. stem-shape $CeRH\text{-}s$ in this category is itself already a PIE development. Under these circumstances, it would be necessary to identify some very special conditioning factor responsible for the preservation (and then even the generalization) of $\acute{k}r\text{-}h_2\text{-}es\text{-}$ (or rather $\acute{s}r\text{-}as\text{-}$) at the I-Ir. stage. On a purely formal basis, and without reference to the evidence of related forms (II above), Gk. $\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$ < $\acute{k}\acute{e}r\text{-}h_2\text{-}s$ would show the structure expected of a primary s -stem made from a $CeRH$ root, but the Indo-Iranian form does not. The zero grade calls for some explanation.

² An analogical $\acute{k}\acute{e}r\text{-}h_2\text{-}os$ (or $\acute{s}rHas$) that has replaced a $*\acute{k}\acute{e}r\text{-}h_2\text{-}os$ (or $\acute{s}arHas$) is not likely – § 9.7.2.2.

³ Schindler, *Flex. und Wortbildung*, 265.

⁴ Cf. Schindler, *Flex. und Wortbildung*, 259 ff.

⁵ RV $t\acute{u}vi\text{-}$ (mant-) is secondary in any case (since $tuH\text{-}s$ would not result in $t\acute{u}vi\text{-}$), and has been remodelled at a relatively late date from expected $t\acute{á}vi\text{-}$ (= Av. $t\acute{a}nuis$), as is suggested by $t\acute{á}vi\text{-}$ (= Av. $t\acute{a}nuis$). The basis of the rearrangement seems to have been the $tuvi\text{-}$ (< $tuH\text{-}i$) of compounds – e.g. $tuvi\text{-}s\acute{v}an\acute{a}s\text{-}$.

⁶ One has $temH\text{-}os$ and not $*temH\text{-}s$ in Ved. $t\acute{á}mas\text{-}$ 'darkness', but cf. the addendum to § 9.7.2.2, and in any case it is still the full grade (to all appearances!) that has been generalized in the root.

41.3 Generally speaking, neuter s -stems with zero root vocalism are secondary formations of one sort or another.⁷ Of those that have the simple structure $R + (e)s$, a zero grade root may be taken from a root noun from which the s -stem is derived (e.g. RV inst. $kṛp-ā$, Av. $kəhrp-$: Latin *corpus* 'body' < $k^{h}p-es-$) [*]. In other cases, the s -stem supplies an abstract substantive to an adjective (usually in $-u-$ or $-ro-$) that has zero grade, and this is the source of the anomaly: e.g. RV $urú-$ 'broad' : $úras-$ 'breast'⁸ (beside $váras-$ 'breadth'), Gk. $\kappa\rho\alpha\tau\acute{\upsilon}\varsigma$ 'mighty' : Att. etc. $\kappa\rho\acute{\alpha}\tau\omicron\varsigma$ 'might' (beside Lesb. $\kappa\rho\acute{\epsilon}\tau\omicron\varsigma$), $\kappa\upsilon\delta\rho\acute{o}\varsigma$ 'glorious' : $\kappa\upsilon\delta\omicron\varsigma$ 'glory' etc.

But if this indicates that $\hat{k}érh_2-es-$ is a secondary formation, and it is being viewed under the assumption of a $CeRH$ by-form of the root, it would be necessary to conclude that $\hat{k}érh_2-es-$ is of the type $k^{h}p-es-$ (*corpus*), an $-(e)s-$ derivative of a root noun. Eventually, however, this would have to be reconciled with the rest of the available evidence, and it has already been noted (§§ 15, 29) that a root noun made from a root $\hat{k}érh_2-$ cannot account even for Mycenaean $kerā$ and $kerajo$ – very easily – not to speak of the relationship between these and $\acute{\alpha}\rho\acute{\alpha}$.

Furthermore, if $\acute{\alpha}\rho\acute{\alpha}$ and $\acute{\sigma}íras$ -stem from a single paradigm, this paradigm must be an extremely archaic one. The comparable structures just cited ($\tau\acute{\alpha}\nu\iota\iota\varsigma$, $\gamma\acute{\epsilon}\rho\alpha\varsigma$ etc.) are found only as isolated relics, and even these no longer show traces of root or suffix apophony. This means that $\hat{k}érh_2-s/\hat{k}érh_2-és-$ would in a sense be the most archaic of them all. But it is difficult to square this conclusion with the fact that the stem(s) in $\hat{k}(e)r(e)h_2-$ (no matter how further analyzed), from which $\hat{k}érh_2-os$ at least ought to have been derived, are themselves preserved well into the histories of some of the individual languages. Why does this secondary formation preserve traces of the root and suffix ablaut that has been abolished in the primary formations that are descriptively identical ($CeRH$ root plus $-(e)s-$)?

The purely semantic difficulties involved in the traditional view ($\acute{\alpha}\rho\acute{\alpha}\varsigma = \acute{\sigma}íras-$) have already been touched upon (§ 41.1).

⁷ For present purposes we may leave out of account zero-root neuter s -stems that are clearly deverbative derivatives of probably recent origin (e.g. RV $júvas$ 'swiftness'; $dúvas$ 'reverence, tribute, offering' less clear; cf. W-D 2.2, 232 f.; 3, 81). Zero-grade root vocalism in non-neuter s -stems is also irrelevant to the analysis of $\acute{\sigma}íras$, of course.

⁸ Cf. also synonymous $vákšas-$ 'breast' and $\acute{\alpha}\psi as-$ 'bosom', which may have played some role in the creation of $úras-$ in the first place. On the secondary nature of the root vocalism of $úras-$ cf. also Manessy *Substantifs en -as-*, 17 f., 94, 210

41.4 These considerations (§§ 41.1–41.3), which are in part (§ 41.2) quite independent of previous conclusions, weigh against a *CeRH* root in general and a single *s*-stem derivative in particular. The standard interpretation of $\acute{\alpha}\epsilon\rho\alpha\varsigma$ and $\acute{\sigma}\acute{\iota}\rho\alpha s-$, which includes both of these elements, will have to be modified.

A different interpretation of these forms may start with the rejection of a root $\hat{k}érh_2-$ (or $\hat{k}reh_2-$?). This is demanded by the material discussed previously (II), and is now justified further by the difficulty of reconciling $\acute{\sigma}\acute{\iota}\rho\alpha s-$ with the known formations in *CeRH*-(*e*)*s*-. The further implications are only those that already follow from the reconstruction of a $\hat{k}ér-h_2$ (IIa) and a $\hat{k}ér-\acute{e}h_2$ (IIb) in the first place: $\acute{\alpha}\epsilon\rho\alpha\varsigma$ and $\acute{\sigma}\acute{\iota}\rho\alpha s-$ are not of the structure *R* + *S*, but are instead to be analyzed *R* + *S*₁ + *S*₂. In both cases, *S*₁ is the -(*e*)*h*₂- that seems called for in any case, and *S*₂ is -(*e*)*s*-, forming derivatives of $\hat{k}ér-h_2$ and/or $\hat{k}ér-\acute{e}h_2$. Recalling that it is precisely the *h*₂-derivatives of $\hat{k}ér-$ (and those only) that include words for both 'horn' and 'head' (for reasons outlined in II), it is not surprising that one of the *s*-derivatives of the *h*₂-stems has the first meaning ($\acute{\alpha}\epsilon\rho\alpha\varsigma$) and the other has the second ($\acute{\sigma}\acute{\iota}\rho\alpha s-$).

42.1 This re-analysis, however, raises anew the question just discussed on the basis of a hypothetical (and now discarded) $\hat{k}érh_2-s$. The problem now is that of deciding whether or not it may be assumed that a single PIE paradigm (of a secondary formation $\hat{k}(e)r + (e)h_2 + (e)s$) is the source of both $\hat{k}ér-h_2-s$ and $\hat{k}íř-h_2-os$, which would then represent divergent levellings once again. Two factors immediately disfavor this view to a certain extent:

1) Making $\acute{\alpha}\epsilon\rho\alpha\varsigma$ and $\acute{\sigma}\acute{\iota}\rho\alpha s-$ secondary formations has no effect on the non-trivial problem of the distinction in their meanings (§ 41.1 etc.).

2) The Vedic paradigm $\hat{k}íř-h_2-os/\hat{k}íř-h_2-sn-$ ($\acute{\sigma}\acute{\iota}\rho\alpha h/\acute{\sigma}\acute{\iota}\rho\alpha s-$) 'head' corresponds to Greek $\hat{k}ér-\acute{e}h_2/\hat{k}íř-h_2-sn-$ ($\acute{\alpha}\acute{\alpha}\rho\acute{\alpha}/\acute{\alpha}\rho\acute{\alpha}h\alpha\tau-$) 'head'. On the basis of this correspondence (plus some additional evidence from Greek—§ 49—and Germanic—§ 50), there arises at least the possibility of a heteroclitic paradigm already in PIE.⁹ But unless we wish to rule out that possibility right now, we can only wonder which paradigm it was (and with what meaning) that contained both $\hat{k}ér-h_2-s$ and $\hat{k}íř-h_2-es-$.

⁹ That the Avestan paradigm (apparently a normal *s*-stem *sarah-*) is an innovation is suggested by the eventual replacement in Skt. (ŚB+) of oblique $\acute{\sigma}\acute{\iota}\rho\alpha s-$ by $\acute{\sigma}\acute{\iota}\rho\alpha s-$ (cf. W-D 3, 315 and §§ 51 ff. below).

Furthermore, the specific pattern of heteroclisis displayed by the Greek paradigm removes all certainty from the premise that *śírah* was actually formed by adding $-(e)s\text{-}$ to a h_2 -stem in the first place. In theory, it might just as well result from the subtraction of the $-n\text{-}$ of an inherited oblique. These questions will be taken up below (§§ 51 ff.).

42.2 First and foremost, however, the idea of formally combining $\acute{k}\acute{e}r\text{-}h_2\text{-}s$ and $\acute{k}\acute{e}f\text{-}h_2\text{-}os$ depends upon the admissibility of certain assumptions that it necessitates. Mechanically reconstructing a single paradigm that would account for both, it would be necessary to assume 1) e/zero root apophony 2) immobile zero grade for $S_1\text{-}(e)h_2\text{-}$ and 3) zero/e apophony for the final $-(e)s\text{-}$ suffix. The result is a theoretical $\acute{k}\acute{e}r\text{-}h_2\text{-}s/\acute{k}\acute{e}f\text{-}h_2\text{-}\acute{e}s\text{-}$. It is the likelihood of this structure with this inflectional ablaut that must be evaluated. As may be imagined, the evidence that bears absolutely directly on the question is not plentiful. But those formations that are strictly comparable at least cast some doubt upon such a reconstruction. A thorough study of the inflectional characteristics of substantival stems of the structure $R + S_1 + (e)s$ (or, more generally, $R + S_1 + \text{proterokinetic } S_2$) cannot possibly be accommodated here. It may be noted in a number of cases, however, that pairs of $R + S_1 + (e)s$ formations that show divergent apophonic shapes rarely necessitate (and sometimes exclude) the assumption that the two forms in question originated from a single paradigm.

42.3 The neuter u -stem $h_2\acute{o}i\text{-}u\text{-}/h_2\acute{i}\text{-}\acute{e}u\text{-}$ 'life, vigor, etc.' (RV *áyū*; Av. *āiīu*, gen. *yaoš*) is the derivational base of two neuter s -stems (descriptively speaking) in Indo-Iranian. One is (perhaps anachronistically) $h_2\acute{o}i\text{-}u\text{-}s$ (RV *áyūh* 'long)life') with a completely immobile stem in Vedic (inst. *áyūṣ-ā*, g.-abl. *áyūṣ-ah*). In this case, the root and first suffix have the same shapes as in the u -stem itself, and since no special connection between root $o\text{-}$ (I-Ir. $\bar{a}\text{-}$) grade and the formation of the s -stem derivative may be assumed, the derivational process in this case is most naturally viewed as the suffixing of a non-ablauting $-s\text{-}$ to the nom.-acc. of the derivational base. Beside this $h_2\acute{o}i\text{-}u\text{-}s$ is a $h_2\acute{i}\text{-}\acute{e}u\text{-}s$, occurring as such only in the nom.-acc. (RV *yóh*, something like 'growth, increase, prosperity' in the formulae *śám yóh* and *śám ca yós ca*; GAv. *yaoš* in *yaož-dā* 'make whole, render intact, restore').¹⁰ The deriv-

¹⁰ For the association of Ved. *yóh*/Av. *yaoš*- with Ved. *áyūh* cf., e.g., Thieme, KZ 69, 176 f. (and Mayrhofer KEWAi 3, 27 f. for further references). In the present context, however, it is to be emphasized that *áyūh* and *yóh* probably do not represent two allomorphs of one and the same paradigm with divergent levelling.

atives RV *yos-ít-*, *yós-ā-*, and *yós-an-* (perhaps made on *vṛśan-*) 'young woman' also presumably belong here. In the case of *h₂i-éu-s*, the *R* + *S₁* allomorphy is that of the oblique of the basic *h₂óǵi-u-/h₂ǵi-éu-*. This, however, leaves open two possible descriptions of the derivational process. Either it was possible simply to extract the oblique of the *u*-stem and suffix it with *-s-* (as was done with the nom.-acc. to produce *áyuṣ-*), or else the *e*-grade of the element before the *-s*-suffix in *h₂i-éu-s* is there in the very first instance on the model of the simpler *R* + (*e*)*s* formations, which show just this structure in the nom.-acc.: *kreyu_h₂-s* > *κρεῦας* / *kravíh*, *h₂eǵi-s* > *aes*, *men-(o)s*¹¹ > *μένος* / *mánas-* etc. In other words, it is difficult to say to what extent the identity of (oblique) *h₂i-eu-* and *h₂iéu-(s)* is a coincidence. But it is very unlikely that there was ever an *s*-stem paradigm **h₂oǵi-u-s/h₂iéu-s-es* (producing two different nom.-accusatives in Vedic itself?). There is even less reason to assume a **h₂eǵi-u-s/h₂i-éu-es-* (parallel to hypothetical *ker-h₂-s/kj-h₂-es-*). This reconstruction will account neither for *áyuḥ* nor for *yóh/yaož-* (*dā-*). Two independent *s*-stem derivatives of a single *u*-stem have to be seen here. And what is most directly relevant to the question under discussion right now is that *áyuṣ-*, the only one of the two for which both nom.-acc. and oblique forms are attested, shows apophony in neither root nor suffix.¹² In any case, it seems that this example of a substantial stem of the structure *R* + *S₁* + (*e*)*s* may have admitted ablaut in the *-(e)s*-suffix within the paradigm, but there is no evidence of any intra-paradigmatic apophony in either the root or the *-(e)u*-suffix.

42.4 The few other relevant cases point to much the same conclusion. From *meǵ-ǵh₂-/meǵ-h₂* 'great' (RV masc. acc. *mahám*, neut. n-a *máhi*), is derived a *s*-stem with some evidence of *-s/-es-* ablaut: nom.-acc. *meǵ-h₂-s* 'greatness' (if this may after all be concluded from the

Latin *ius* 'law, legality' etc. (< *iēuos*) has sometimes been etymologically referred to Ved. *yóh* (e.g. Ernout-Meillet *DELL*, 330; Walde-Hofmann *LEW* 1, 733), but from every point of view seems better taken as simply the verbal noun to *iēu(H)-* (Ved. *yáuti* 'binds, fastens') with an original meaning 'obligation'.

Finally, the interpretation of I-Ir *iaus* as a neuter *s*-stem nom.-acc. in a fossilized phrase *iaus dhā-* (Gath. *yaoš* ... [*yaož*] *dānē*, YAv *yaoždā-*) is strongly supported by the parallel I-Ir *mans dhā-* (YAv *mas* ... *dhā-*; Gath., YAv *mazdā-* 'pay attention'), as argued by Schindler, *Flex. und Wortbildung*, 266.

¹¹ Cf. again Schindler, *Flex. und Wortbildung*, 266.

¹² Doric αἰῆς (< *h₂eǵiyes*) is not evidence for an ablauting (*-s/-es-*) suffix in the paradigm that gave rise to *áyuḥ*. The Greek form is better taken as the endless locative of an animate *h₂eǵiūs* (amphikinetic) beside the neuter *h₂oǵiūs* of *áyuḥ*. Cf. Peters *Untersuchungen*, 76f. with further references.

derivative RV *máhiš-vant-* 'great' = Av. *maziš-uuant-*), vs. oblique *meğ-h₂-es-*, leading to a normalized I-Ir. *mažh-as-* (RV *mahas-* : Av. *mazah-*). This would again point to apophony in the final *-(e)s-* at most.

Similarly RV *sárpiš-* 'melted butter, fat' beside Greek ἔλφος / ἔλπος 'oil, fat, butter' (Hsch.) may be referred straightforwardly to a unitary *selp-h₂-s* / *selp-h₂-es-* with ablaut in the final *-(e)s* but not elsewhere. And RV *áruš-* 'wound', when taken together with OIc. *orr* 'scar' (Gmc. **arwiz*), points to *ar-u-s* / *ar-u-es-* most directly.

Beside the Greek fem. *i*-stem κόνις (acc. κόνιν) 'dust' (*kon-i-*) there is some evidence for an *s*-stem derivative *kon-i-s-* in the compound κονίς-σαλος 'cloud of dust' and the denominative verb κονίω < *konis-jo/e-* (Hom. κονίοντες etc.). This is paralleled by the *ken-i-s* of Latin *cinis*, *-eris* 'ashes'. But the stems *kon-i-s-* and *ken-i-s-* cannot be combined in a single paradigm. There are no *s*-stems with *o/e* root apophony. What the forms here point to is a primary acrostatic *i*-stem *kón-i-* / *kén-i-* of animate gender (κόνις, -ιος f., but cf. masc. *cinis*), typologically identical to *ógni-/égni-* 'fire' (Lith. *ugnis*, OCS *ognĭ* ultimately reflecting *ognis*; Latin *ignis* < *egnis*¹³). The *s*-stem derivatives are best taken as parallel but independent extensions of *kon-i-* and *ken-i-* respectively (cf. *h₂oi-u-s* vs. *h₂i-ey-s* in § 42.3). These parallel derivatives always constituted two separate paradigms.

The other *R* + *S₁* + *(e)s* formations that occur are of somewhat less interest since they are limited to a single language and show an invariant stem shape. In addition, the *R* + *S₁* formation from which they are derived is often lacking. One may mention here RV *áp-n-as* 'possession(s)' along with Av. *afnah-* (*uant-*), where the *s*-formation is in Caland alternation with *-ont-* (Hitt. *happ-in-ant-* 'wealthy') and *-ē-* (Hitt. *happ-in-e-š-* 'become wealthy'), and which may be described as an *s*-stem derivative of an *n*-stem which is not itself attested anywhere. Similar is the situation of a form like Greek ἔθ-ν-ος 'band, nation'.¹⁴

Comparable uninformative cases include RV *táp-u-š-* 'hot; heat' (cf. *táp-u-* 'hot' on the one hand and *táp-as-* 'heat' on the other), or Latin *uetus* 'old' (*uet-u-s*—cf. Lith. *vėtušas*, OCS *vetŭxŭ*¹⁵). The series of

¹³ Cf. Schindler, *BSL* 70, 4.

¹⁴ Cf. J. Manessy-Guitton, *BSL* 67, 85 ff.

¹⁵ It is difficult to justify the often-repeated idea (e.g. Walde-Hofmann *LEW* 2, 777) that *uetus* is ultimately simply an *s*-stem substantive identical to Gk. (F)έτος 'year'. Nor is it probable that *uetus* (Leu², 269, 374) was back-formed to *uetustas*, since a back-formation that results in a unique item (adjective in *-us/-us-es* > *-us/-eris* m.f.n.) is practically a contradiction in terms. Cf. also Szemerényi *ZDMG* 101, 204 f., *Gnomon*

Sanskrit $-u$ -stems beside $-us$ -stems (e.g. *manu-* 'human being' vs. *manuṣ-* 'id') is descriptively comparable, but these are Sanskrit creations and not very useful for present purposes in any case.

42.5 In summary, distinctions in the root vocalism of parallel $R + S_1 + (e)s$ formations are found ($h_2o\hat{i}-u-s$ vs. $h_2i-eu-s$ or *kon-i-s* vs. *ken-i-s* as above), but when this is so, it is not in general necessary (and it is sometimes impossible) to take this as the result of divergent levelling in a single reconstructed paradigm. Even where an e -grade in (R or) S_1 may be seen as conditioned by the further suffixation of $-(e)s-$ as S_2 (schematically $h_2i-\hat{u} + (e)s \rightarrow h_2i-eu-(e)s-$), there is absolutely no reason to assume that such an e -grade alternated with zero within the paradigm of the resultant $R + S_1 + (e)s$ formation. It thus remains to be demonstrated on some positive grounds that a paradigm like $C\acute{e}R-C-s / C\hat{R}_\phi-C-\acute{e}s-$, with the fully ablauting character that the more primary $C\acute{e}R(C)-s / C\hat{R}_\phi(C)-\acute{e}s-$ once theoretically had, was ever possible in the first place in these more complex structures.

42.6 A corollary on the negative side is that the justification of a $\hat{k}er-h_2-s / \hat{k}r-h_2-es-$ requires a solution to the problem brought up earlier (§ 41.3) in a slightly different connection. Such an alternation, one may assume at the outset, is very unlikely to be the direct result of the application of rules that specifically governed the ablaut of secondary (or even tertiary) formations and had no connection with primary formations. If anything, one would be inclined to view the pattern as originating from a re-analysis of $\hat{k}er-h_2-s$ as $\hat{k}erh_2-s$, parallel to $\hat{g}erh_2-s$, $sterh_3-s$ etc. As a result, the apophony of hypothetical oblique $\hat{g}rh_2-es-$, $st\hat{r}h_3-es-$

43, 668 for the suggestion that Latin *uetus* is from $\hat{u}etuss < \hat{u}etusos$, identical to the Balto-Slavic forms. But the syncope and inflectional switch would be hard to parallel (cf. *umerus < omesos*, *numerus < nomesos*(?); $X-ger$ not $< x-gesos$ but analogical to $X-fer$). The inflectional rearrangement might be made easier by the assumption of an original $\hat{u}etus-i-$ for Latin (vs. $\hat{u}etus-o-$ for B-S), but abl. *ueterē*, gen. pl. *ueterum*, nom.-acc. neut. pl. *uetera* not only make an i -stem adjective unattractive (since i -stem inflection generally spreads among adjectives in Latin), but are reminiscent, among non-thematic Latin adjectives, only of the comparative (*-iore*, *-iorum*, *-iora*), and thus favor the analysis of *uetus* as a real s -stem. Perhaps one could suppose that just as Ved. *tápu-* 'hot' made a derivative *tápu-ṣ-* 'hot' whose substantivized neuter (also *tápu-ṣ-*) functioned as the adjectival abstract as well (*tápu-ṣ-* 'heat'), a $*\hat{u}etu-$ 'old' also made a derivative $\hat{u}etu-s-$ 'old' (whence L. *uetus*), and the substantivized neuter $\hat{u}etu-s-$ 'oldness, old age' served as the basis of a further derivative $\hat{u}etus-o-$ 'old' (whence Lith. *vėtušas*, OCS *vetŭxŭ*). This must remain conjectural, however, if only because there is no direct evidence of the $*\hat{u}etu-$ 'old' that is presupposed.

would have been transferred to the seemingly parallel secondary formation, and its oblique¹⁶ would then have become (synchronic) *kérh₂-es-* / diachronic *kér-h₂-es-*.¹⁷ But it is unlikely that the secondary *s*-stem could

¹⁶ One could, of course, put it the other way around and suppose that a *kér-h₂-(o)s/kér-h₂-es-* had its oblique re-analyzed as *kérh₂-es-* (parallel to *gérh₂-es-*, *stérh₃-es-*) and that this led to a new nom.-acc. *kérh₂-s* (parallel to *gérh₂-s*, *stérh₃-s*). But this will not help meet the objection about to be raised.

¹⁷ In some cases it is attractive to assume that a more complex formation was in fact re-analyzed (or failed to be / stopped being analyzed), with the result that the apophony and/or accentual mobility of more primary formations were introduced into the more complex one. For example, it seems plausible that ὄρυγναι / ὄρυγνῆς (Hom., Ion.) vs. ὀρόγναι (Pi.+) 'fathom' points to the one-time existence of a paradigm ὀρόγναι / ὀρόγνῆς, as if < *h₃régusih₂ / h₃régusiéh₂-* (unless ὀρόγναι results from an assimilation of ὄρυγναι to a synonymous *ὀρογος < *h₃rógō-*; cf. (δ)εκ- etc.) ὠρυγος 'ten etc.) fathoms long'? But the accent alone of ὄρυγναι / ὄρυγνῆς is enough basis on which to make the point). The accentual (with or without apophonic) alternation observable here in a rather complex derivative whose final suffix is *-ih₂* (*h₃r(e)g-u-s-ih₂* = *R* + *S₁* + *S₂* + *ih₂*?) may well ultimately constitute an "imitation" of the simpler type *déiu-ih₂ / diu-iéh₂-* (Ved. *deví* / Gk. *δῖα*) with only *R* + *ih₂*, where the entire concatenation *h₃r(e)g-us-*, unanalyzed, has apparently been put on the same level as *d(e)iu-* at least for accentual purposes—if not for apophonic purposes as well—so that the full-grade accented first syllable of *déiu-ih₂* has (directly or indirectly) been transferred to give an accented (and perhaps full-grade) *h₃régus-ih₂* (or at least *h₃régus-ih₂*), while the structure of oblique *diu-iéh₂-* is repeated by *h₃régus-iéh₂-* in parallel fashion.

But (as J. Schindler points out to me) the structure of *déiu-ih₂* could be described not only as an accented full-grade first syllable plus zero-grade suffix, but also as having a full grade in (and the accent on) the element that immediately precedes the inflectional suffix *-ih₂*. And it is this second possible synchronic analysis of *déiu-ih₂* that seems to have been applied to a more complex (*R* + *S* + *ih₂*) structure in yielding *piHuérih₂* 'fat' (if that may be assumed to have been the most original accent of the form underlying Ved. *pívarī*, Gk. *πίερα*).

In short, there are cases in which one may at least take seriously the possibility that relatively complex derivatives with relatively long derivational histories have analogically introduced paradigmatic alternations proper to simpler formations of the type to which the more complex ones belong. But in the case now in question (*kér-h₂-s* → *kérh₂-s* → *kérh₂-es-*? and cf. note 16), the assumption of re-analysis followed by the introduction of analogical paradigmatic alternations cannot be convincingly supported by parallel cases among *ih₂*-stems because Ved. *deví* : Gk. *δῖα* themselves already show that the paradigmatic alternations in question had not yet been given up in PIE among *ih₂*-stems, and one may therefore operate with the assumption that those alternations actually spread in PIE and/or even in the early histories of the individual languages. But there is practically no way around the conclusion that neuter *s*-stems had at least generalized root *e*-grade well before the end of the history of the protolanguage (and there was probably no suffix ablaut for neuter *s*-stems in the latest PIE either). The spread of such long-defunct alternations makes for a risky hypothesis.

have been derived from the h_2 -stem(s) early enough that paradigms like $\hat{g}erh_2\text{-}s/\hat{g}r\acute{h}_2\text{-}es\text{-}$ etc. were still the norm (§ 41.3). And even if $\hat{k}(e)r\text{-}h_2\text{-}(e)s\text{-}$ were that old, there remains an insurmountable problem: why should a formation that is only secondarily a member of the $CeRH\text{-}s$ group preserve traces (in $\acute{s}\acute{\imath}ras\text{-}$ vs. $\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$) of apophony that the primary members all seem to have levelled out in favor of the nom.-acc. allomorphy? Generalized root e -grade is so consistent (not only in the $\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$ / $krav\acute{\imath}h$ type but in neuter s -stems in general) that it is difficult not to conclude that this generalization occurred already in PIE. It is unconvincing to suppose on the one hand that the model of the primary $CeRH\text{-}(e)s$ -stems contributed to the re-analysis of $\hat{k}\acute{e}r\text{-}h_2\text{-}s$ as $\hat{k}erh_2\text{-}s$ (and to the consequent installation of root ablaut), but then to suppose on the other hand that this model failed to apply when it comes to the question of the levelling of apophonic alternations. The implications are clear. All things being equal, any neuter s -stem (primary or secondary) that once may have had e /zero root apophony ought to be expected to generalize e there. Those that show zero (types *corpus*, $\acute{\imath}rah$, $\acute{\kappa}\acute{\rho}\alpha\tau\omicron\varsigma$, $\acute{\kappa}\acute{\upsilon}\delta\omicron\varsigma$ as above) seem to be secondary formations from derivational bases that had themselves generalized zero grade. There is no particular reason to believe that such secondary s -stems ever showed e -grade roots anywhere in their paradigms. It is in this light that $\hat{k}\acute{\imath}\text{-}h_2\text{-}os$ (only I-Ir. *as such*) should be interpreted.

42.7 To conclude the summary of the questions raised by combining $\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$ and $\acute{s}\acute{\imath}ras\text{-}/sarah\text{-}$ in a single reconstructed paradigm, it may be reiterated (cf. § 42.1 no.2) that $\hat{k}\acute{\imath}r\text{-}h_2\text{-}sn\text{-}$ itself has some chance of having been the oblique of a PIE heteroclite for 'head', but there is no plausible way of accommodating $\hat{k}er\text{-}h_2\text{-}s$ ($\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$), $\hat{k}\acute{\imath}r\text{-}h_2\text{-}es\text{-}$ ($\acute{s}\acute{\imath}ras\text{-}/sarah\text{-}$) and $\hat{k}\acute{\imath}r\text{-}h_2\text{-}sn\text{-}$ ($\acute{s}\acute{\imath}r\acute{s}n\text{-}/\acute{\kappa}\acute{\rho}\alpha\tau\omicron\varsigma$) all at once. And then there is the question of the semantic distinction between $\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$ 'horn' and $\acute{s}\acute{\imath}rah\text{-}/sarah\text{-}$ 'head' to be dealt with.

43.1 The alternative to combining $\hat{k}\acute{e}r\text{-}h_2\text{-}s$ 'horn (object)' and $\hat{k}\acute{\imath}\text{-}h_2\text{-}os$ 'head' in some such way is to conclude that they are both derivatives of $-(e)h_2$ -formations (or an $-(e)h_2$ -formation) made on $\hat{k}er\text{-}$, but are independent derivatives and have always constituted two separate paradigms. This view of these two s -stems, based on considerations that are mainly independent of previous conclusions (II a, b, c), can be aligned with these previous conclusions easily and advantageously. The general direction of the proposals to follow will be that of taking $\hat{k}\acute{e}r\text{-}h_2\text{-}s$ 'horn (object)' to be a derivative of $\hat{k}\acute{e}r\text{-}h_2$ 'horn (material)', while

seeing $\hat{k}ér-h_2-os$ 'head' as belonging with $\hat{k}ér-éh_2$ 'skull, head' instead. The question of the difference in meaning between $\acute{\kappa}έρας$ and $\acute{\sigma}ίρας-/sarah-$ thus ceases to exist. Morphologically, it is the zero-grade root of I-Ir. $\hat{k}ér-h_2-os$ that most calls for some explanation. The situation is probably more complicated than a straightforward $\hat{k}ér-éh_2 \rightarrow \hat{k}ér-h_2-os$ (§§ 51 ff.), but there may be a way to connect the lack of root *e*-grade in the derivative $\hat{k}ér-h_2-os$ with the lack (by definition) of root *e*-grade in hysterokinetic $\hat{k}ér-éh_2$ (cf. $k^*yp- : k^*yp-os$ § 41.3). It will be suggested later on that although there is such a connection, it is only an indirect one (§§ 51 ff.).

43.2 A question of method suggests itself at this point. Despite the difficulty of combining $\hat{k}ér-h_2-s$ 'horn (object)' and $\hat{k}ér-h_2-os$ 'head' into a single PIE paradigm (§§ 40–42), there are unattractive aspects to the assumption that a PIE $\hat{k}ér-h_2$ 'head-bone (mat.)' and a PIE $\hat{k}ér-éh_2$ 'the head-bone (collective)', formations which already shared the same root and suffix, would then also both be further extended by the same secondary suffix (-*es*-), as if parallelism of morphological structure could somehow lead by itself to parallelism of further derivation. This may be a matter of taste to some extent, but it should be granted that a simple $\hat{k}ér-h_2 \rightarrow \hat{k}ér-h_2-s$ beside a simple $\hat{k}ér-(é)h_2- \rightarrow \hat{k}ér-h_2-(o)s$ could justifiably be considered too pat and symmetrical to be entirely satisfying.

To anticipate certain points that will be made more fully later on, however, it may be said that the apparent (and suspicious) symmetry of theoretical $\hat{k}ér-h_2 \rightarrow \hat{k}ér-h_2-s$ and $\hat{k}ér-éh_2 \rightarrow \hat{k}ér-h_2-os$ is both superficial and misleading in this form. In fact, putting these two things side by side in this way at all is to create a comparative mirage (§§ 44, 57).

44.1 The specifics of the derivational history of $\acute{\kappa}έρας$ are more straightforward than those of $\acute{\sigma}ίρας-/sarah-$, and we may begin with the Greek form. It may be recalled that Greek itself presents evidence for $\hat{k}ér-h_2$ in Myc. $kerā$ 'horn (material)' and $kerajo-$. The gender of this formation cannot be directly ascertained, but it seems to be synchronically feminine in Myc. (§§ 14, 15, 32.2, 37.10). In light of this, it would seem completely unobjectionable to propose that this formation served as the derivational basis for the creation of a neuter derivative in -(*e*)*s*- with the meaning 'horn (object)'—in effect a replacement of some form(s) of the type $\hat{k}or-u-$ (and cf. Gk. $\delta\acute{\iota}\kappa\alpha\omicron\upsilon\omicron\omicron\varsigma$ § 3) and/or $\hat{k}(e)r-n(o)-$ (and cf. $\kappa\rho\acute{\alpha}\nu\omicron\varsigma$ § 5).

In general, the suffix -(*e*)*s*- is easily paralleled as a secondary formant. What is most relevant for present purposes, however, is that it is

reasonably well-represented as such among IE body-part terms. The typical situation is the one envisioned here for $\hat{k}ér-h_2-s$: the derived s -stem is found in only one or two languages while the simpler formation from which it was derived is still more-or-less well represented—sometimes even in the language that has the s -derivative:

a) root noun $h_3\check{e}k^h$ - 'eye' (RV $n(i)yak/nīc$ - 'downward' etc.; Gk. dual ὄσσε, cpds. in -οψ etc.; Arm. pl. $ač(k^c)$; L. cpds. in -ox; OCS dual oči etc.): ok^h-es - (OCS $oko/očese$ etc.; probable in Skt. $ákṣ(i)/akṣ(ṇ)$ -), dual $akṣī$, cpds. like $an-akṣ-á$ - and GAv. $aš(i)$ - if this is remodelled from $*axš(i)$ - under the influence of $uši$ 'the two ears')

b) root noun $k^hγp$ - 'form, figure, body' (RV $kγp$ -, Av. $kəhrp$ - cf. § 41.3) : $k^hγp-es$ - (Latin *corpus*)

c) root noun $tuek$ - 'skin, hide' (RV $tvák/tvácām$ etc.; cf. Hitt. $tuekka$ - 'body, person') : $tuek-es$ - in AV $súrya-tvacas$ - 'with shining skin', $tvacas-yá$ - 'in/on the skin' and cf. Gk. $σάκος$ 'shield' ($tuakos$ -cf. φερρε-σασκής)

d) a series of parallel cases is to be found in forms like Gk. $\alpha\nu\tau\iota-\kappa\rho\upsilon$ 'face to face' < $-kr-u-(h_2)$ vs. OCS $čřěvo$ 'body' < $ker-ū-es$ - (§ 8.4);¹⁸ Gk. $\delta\epsilon\lambda\phi\acute{\upsilon}\varsigma$ 'womb' < $g^h\text{elbh-}u-(h_2)$ -¹⁹ vs. Av. $garəbuš$ - 'new-born animal' < $g^h\text{elbh-}u-s$ -; this Avestan form, in turn, would seem to have had something to do with the creation of a $tanuš$ - 'body' beside $tanū$ - (= OP $tanū$ -, RV $tanū$ -), if the locative $tanuši$ (Y. 43.7) is trustworthy after all; although there is no u -stem attested beside RV $áruṣ$ - 'wound' and OIc. orr 'scar' (§ 42.4), the lack of a suffix $-ues$ - that forms substantives points to a segmentation $ar-ū + (e)s$ - and therefore to an s -stem derivative of a u -stem.

44.2 The most important example of this sort, however, is $kréu_h2-s$ (> $\kappa\rho\acute{\epsilon}\alpha\varsigma$, RV $kravíh$), at least in its Greek development. This s -stem, certainly of PIE date, is a derivative of the root noun $kruh_2$ - jointly reflected by Avestan $xrū$ - 'lump of flesh', Slavic $*kry/kriŭe$ 'blood' (e.g. OCS $krŭvŭ$), and Irish $crú$ 'blood'. Although the Avestan root noun, in its one occurrence (Yt 14.33), has a concrete and singulative meaning, this contrasts with the Slavic and Irish correspondents, which agree on

¹⁸ One might even consider the possibility of identifying the $-es$ - of OCS $čřěvo$ directly with the $-s$ of $\alpha\nu\tau\iota-\kappa\rho\upsilon$ - (cf. §§ 26.8.3, 26.10.2—but also § 26.8.2 for what would at least be a less controversial explanation of the $-s$ of $\epsilon\gamma\gamma\acute{\upsilon}\varsigma$ also applicable to that of $\alpha\nu\tau\iota\kappa\rho\upsilon\varsigma$).

¹⁹ $-u-eh_2$ in Dor. $\delta\epsilon\lambda\phi\acute{\upsilon}\alpha$? This form is known only from Gregorius Corinthius, however.

denoting the substance 'gore, blood'²⁰ [*]. This very distinction is made within Greek itself, and consistently so in Homer, where the substance 'raw flesh' is denoted by the enigmatic κρέα (synchronically a nom.-acc. pl.),²¹ while κρέας always means 'piece of flesh'. Now κρέα cannot itself directly continue the root noun found in Avestan, Slavic and Irish, and the details of its interpretation cannot be accommodated here.²² But descriptively speaking, the semantic relationship between *kruh₂-* 'gore' (Slav. *kry*, Ir. *crú*) and *kréyh₂-s* (κρέας 'piece of flesh') is parallel to that between *kér-h₂* (Myc. *kerā*) 'horn (material)' and *kér-h₂-s* (κέρας) 'piece of horn' > 'a (single) horn'. In both cases, the Greek situation is that an *s*-stem derived from a noun denoting a substance ends up as the word for a piece of that substance.

The same relationship has been said to apply²³ to pairs like RV *vāc-* 'voice, speech' : *vācas-* 'word', but it is by no means accurate to say that all, or even most, cases of this sort show the pattern in question. Some pairs even show what is practically the reverse: non-collective Av. *xrū-* 'piece of flesh' vs. RV *kravīh* 'flesh' [**]. What may be retained in the present case is simply that the non-collective secondary *s*-stem κρέας in Greek goes hand in hand with the non-collective secondary *s*-stem κέρας in that language.

Finally, on the subject of the functional difference between *kér-h₂* and its derivative *kér-h₂-s* in Greek, it may be relevant that the *-ας* type has spread among animal body parts during the history of Greek. κῶας 'fleece' (Hom.) has replaced an earlier κῶ(F)ος (Myc. *ko-wo*; cf. Hom. κῶεα, κῶεσι). At a later date δέρος 'hide' partly gives way to δέρας. These remodellings may reasonably be thought to have been carried out under the influence of κρέας and κέρας. Similarly, the *-πελας* 'skin' of ἐρυσί-πελας 'inflammation of the skin' beside πέλμα 'sole' (to which cf. OE *fylmen* 'skin, membrane, film') would seem to result from the same general development (cf. in particular δέρμα : δέρας).

²⁰ On the assumption that Av. *xrū-ra-*, *xrū-ma-*, *xrū-ta-* 'gory' are denominative derivatives of the root noun in question, even Avestan would offer at least indirect evidence of *xrū-* in the meaning 'gore, bloody flesh'—i.e. the substance.

²¹ The "regular" form κρέαα / κρέα is both rare and restricted in Homer.

²² In any case, see Sommer, MNHMHΣ XAPIN, 2, 145 ff.

²³ Schmidt *Neutra*, 145 f. with note 1, for example, gives some instances of *s*-stems derived from substantives. Such derivatives are not themselves infrequent, although there is a demonstrable difference in meaning between the substantival basis and the *s*-stem derivative (collective vs. non-collective, or vice versa) only in a minority of the cases.

In such a context, it might be worthwhile to consider the possibility that the choice of $-(e)s\text{-}$ in particular to derive the object-word $\hat{k}\acute{e}r\text{-}h_2\text{-}s$ from the material-word $\hat{k}\acute{e}r\text{-}h_2$ was partly influenced by $k\acute{r}\acute{e}y\text{-}h_2\text{-}s$ too, but at a much earlier date. However this may be, it seems fair to emphasize that from the point of view of the relevant derivational processes and the function of the resulting derivatives, the comparison of $\hat{k}\acute{e}r\text{-}h_2 \rightarrow \hat{k}\acute{e}r\text{-}h_2\text{-}s$ to $k\acute{r}u\text{-}h_2 \rightarrow k\acute{r}e\text{-}y\text{-}h_2\text{-}s$ is somewhat more illuminating than the bare observation that $\hat{k}\acute{e}r\text{-}h_2\text{-}s$ (κέρας 'horn') and $\hat{k}\acute{y}\text{-}h_2\text{-}os$ (σίρας / sarah- 'head') share the same root and suffixes.

45. The discussion of κέρασ up to this point has left open the possibility (but certainly not demanded) that this formation was created only within Greek. In principle, the question of whether or not $\hat{k}\acute{e}r\text{-}h_2\text{-}s$ was already a PIE formation reduces to the question of whether this stem is found as such—and with this meaning—in another language, or is at least presupposed by still more complex formations attested elsewhere. In fact, an exact correspondent of κέρασ does not occur anywhere else. As for possible further derivatives, it is the 'hornet' words ($\hat{k}\acute{r}h_2\text{-}sro\text{-}$, $\hat{k}\acute{r}h_2\text{-}s\acute{o}n\text{-}$; see V) that are potentially relevant. But it turns out that these are ambiguous enough in the precise details of their derivational histories that it cannot be said with any confidence that they presuppose a $\hat{k}\acute{e}r\text{-}h_2\text{-}s$ 'horn'. The result is that this formation may either be an old one that was preserved only in Greek or an early Greek creation altogether.

46.1 It remains to mention briefly some details of the further developments (inflection, composition, derivation) undergone by this formation. Homer has only the original $s\text{-}$ stem inflection (κέρας, κέραι, κέρα', κερῶων, κερᾶεσσι ~ κερᾶσιν). So also Ionic, but with the switch to $-\alpha\varsigma$, $-\epsilon\omicron\varsigma$ frequently found in literary post-Homeric texts. In Attic, however, already in the 5th c. B.C.,²⁴ the paradigm was normally κέρασ / κερᾶτ- (e.g. Aesch. frag. 185 κερᾶσι, E. Bacch. 921 κερᾶτα etc.). The model for this innovation was presumably a paradigm like ὅς (< ὄμhos) / ὅατος (< ὄμhat-) 'ear', where the synchronic analysis οὗ-ς / οὗ-ατ- led to κέρα-ς / κερᾶ-ατ- whence κερᾶτ- with accent retracted by pressure from the nom.-acc. κέρασ.²⁵ An oblique

²⁴ Cf. Meisterhaus-Schwyzler, 143 and, in general, Lejeune, *RPh* 42, 230 ff.; Chantraine *Morphologie*, 65 ff.—esp. 67 f.; Schwyzler *GG* 1, 514 f.; Schmidt *Neutra*, 321 ff.

²⁵ Cf. Schwyzler *GG* 1, 515 with note 3 for a different suggestion: κέρα > κερᾶ plus $-\alpha \rightarrow \kappa\epsilon\rho\alpha\tau\alpha$. It is preferable, however, to operate with a strictly analogical explanation and an identifiable model.

κεῖρατ- seems also to exist. If Pi. *frag.* 166.4 (dactylo-epitrite) is to be analyzed (with Snell-Maehler) as D-D, then the line ends | ἄργυρόων κῆρατων. Such an oblique would stem from an analogical process entirely different from the one that produced Attic κεῖρατ-. One might think of πείρας : πείρατα etc. = κέρας : κέρατα or πείρασι : πείρατα etc. = κέρασι : κέρατα.

46.2 The various forms in which κέρας appears as a first compound member present no serious problem. The basic expectable κερασ- (cf. ἔπος : ἐπεσ-βόλος, τέλος : τελεσ-φόρος etc.) occurs, but rarely, and not before Sophocles (κερασ-φόρος 'horned') and Plato (κερασφόρος, κερασ-βόλος 'stubborn').

In Homer, the only compound with this first member is κεραοξόος 'polishing horn, polishing the bow' (Δ 110 ... | κεραοξόος || ἦραρε τέκτων #). Comparison with Ψ 712 (... | τοὺς τε κλυτὸς || ἦραρε τέκτων #) suggests that κεραοξόος belongs to a large class of expressions of the shape and position | ◡ ◡ - ◡ ◡ || that seem to have been coined by artificial epic morphological processes specifically to be used in this position (cf. A 129, Θ 241; B 113 etc. | ἐϋτείχεον || or Ξ 287, ζ 103 | περιμήκετον ||).²⁶ As to the actual process involved, one may formally compare either the insertion of a "linking" -o- (again for metrical purposes) in a case like ἔλος 'marsh' : ἐλεό-θρεπτος B 776 'raised in the marshes' or the substitution of a derived adjective (κεραός in this case) for the substantive (cf. ἄλιο-τρεφής δ 442 'sea-bred').²⁷

Given the post-Homeric Ionic κέρεος, κέρα etc., κερο-πλάστης 'braid-maker, hairdresser' in Archilochus²⁸ is particularly easy to explain (cf. the type μένος : Hom. μενο-εικής 'conforming to one's desires'). But the same κερο- is also found in Attic (A. κερο-τυποῦμαι 'be butted, tossed about' etc.), where a κερε- oblique is not found. Inflection in -εος etc. for original -ας stems, however, is not a pre-requisite for compositional -o-forms in any case (cf. κρέας : A. κρεουρός, γῆρας : S. γηροβοσκός).

Just as μένος : μενο- etc. are matched by κέρας : κερο-, it would be possible in theory to produce a κέρας : κερε- parallel to μένος :

²⁶ Chantraine *Gramm.*, 96 with reference to Meister *HK*, 13 ff.

²⁷ Risch², 218; cf. Sommer *Nominalkomp.*, 19 f. with 20, note 2 (although I fail to see why ὑπικέρως must contain a substantive -κέρως as its second member if ας-stem simplicia, as second members of bahuvrihi, regularly appear with compositional -o- (-α(h)-o-) for reasons that Sommer explains on p. 19).

²⁸ Cf. κερόεις, Anacr. and Simon.

μενε-πτόλεμος etc. once μενε- (: μένω) had been synchronically re-identified with μένος. That this re-identification actually occurred is shown by Σθενέ-λαος, made from σθένος on the model of Μενέ-λαος (as if from μένος).²⁹ A compositional κερε- produced in this way eventually occurs in Appollonius' κερεαλκής 'with strong horns' [*].

46.3 The forms of κέρας as a second compound member present somewhat more variety. There also arises the more basic question of what the exact relationship is between the compounds meaning '-horned' that have some form of κέρας itself and those that end in -κραιρα (e.g. Hom. ὀρθό-κραιρα 'straight-horned'). This will be discussed later (§§ 65 f.).

The history of κέρας as a second member can be briefly sketched. The only Homeric case is the hapax ὑψίκερων (ἔλαφον) at κ 158. This is clearly a possessive ('with horns aloft') and the only plausible analysis is therefore -κεραh-o- with contraction³⁰ (cf. ἀγήρως, -ων < -γήραh-ος, -ον³¹). The accent of ὑψίκερων, which agrees with that of the post-Homeric compounds in -κερως, -ων (Hdt., A. βούκερως; Pl. ἄκερως etc.) is analogical in any case.³²

Beside this -κερα(h)-o- was made a "normal" feminine (as if from -κερα(h)-ā-) at a post-Homeric date. The resulting feminine bahuvrihis in -κερᾱ (B. 18.24 καλλικέραν δάμαλιν, 15.22 ὑψικέραν βοῦν) are, in effect, isofunctional with the compounds in -κραιρα.

This new feminine in -κερᾱ was perhaps partly responsible for the introduction, by back-formation, of a new masculine type in -κερο- (Hes. νήκερος, Archil. μουνό-κερος).

On the other hand, contracted -κερως was sporadically transferred to -ως/-ωτος inflection. The first examples of this are two occurrences of masc. acc. δικέρωτα at *Hom. hymn* 19.2 and .37. In the second of these lines there also occurs ἡδυγέλωτα, the only form in the Homeric corpus that shows the later (Hdt., Att.) dental stem paradigm of γέλως.

²⁹ Σθενε- cannot easily be deverbative to σθένειν 'be strong' (like Μενε- : μένειν) since σθένειν is apparently post-Homeric (first in Aeschylus). Cf. Risch², 218.

³⁰ Even if the simplex κεραός 'horned' reflected κεραφό- (but see § 47), it would not itself be the second member of this compound—cf. Risch², 88. Sommer, who calls κεραός < κεραh-ō- 'auffallend', apparently sees the second member as a substantive (cf. note 27 above). Neither of these judgments seems compelling.

³¹ It is at least questionable whether compositional -γήρως (: γήρας) is an s-stem (parallel to men-stem -αἶμων : αἶμα) with an analogical accusative -γήρων (cf. Risch², 88) because of -σεβής : σέβας and -σκεπής : σκέπας.

³² Lejeune, *RPh* 18, 65 ff.

This compound in -*κερωτ-*, unparalleled until very late, may be seen as immediately conditioned by -*γελωτ-*, but indirect models for an inflection -*κερως* / -*κερωτ-* were present anyway in *χρώς* 'skin' (*χρωτός* K 575), *ἰδρώς* (*ἰδρώτα* Hes.) 'sweat'.

Meanwhile, *κέρας* as a simplex had been given an oblique stem in -*ᾱτ-* (especially in Attic), and compounds in -*κερᾱτ-ο-* appearing in Attic authors³³ (e.g. *ἄ-κέρατος* Pl. +) present no problem. The secondary oblique occurs without a compositional vowel in *ὕπνικερατα* (*πέτρων*)—Pi. *frag.* 325 (Snell-Maehler).

No other types of second members from *κέρας* occur at an early date. On the pattern *σκέπας* 'shelter' : *ἄνεμο-σκεπής* 'offering shelter from the wind' (Hom.), *σέβας* 'reverence' : *λαο-σεβής* 'with the reverence of the people' (Pi.), one might expect compounds in -*κερής* (: *κέρας*) to be possible. Such a compound, with (artificial) epic inflection -*κερήος* / -*κερήα* (modelled on Hom. -*κλής* / -*κλήος* / -*κλήα*) eventually turns up in Aratus' *αἰγο-κερήος*, -*κερήα* 'capricorn'. The *ὕπνικερός* / -*κέρητος* mentioned by Choerob. is one step more analogical.³⁴

The simplex itself occurs in a few late determinative compounds (*δί-κερας* 'double horn' Callix; plant names such as *βούκερας* 'fenu-greek' Nic.). Finally, there are a few sporadically attested compounds of the type *δι-κέρατος* 'two-horned' (*Batrach.*, *AP*).

47.1 Aside from the compounds in -*κραιρα* 'horned', which may or may not best be taken as showing stems derived from *ḱér-h₂-s* (IV below), the Greek derivatives of *κέρας*³⁵ are not in general illuminating from a historical point of view. It is important, however, to discuss *κεραός* 'horned' briefly. This adjective has traditionally been reconstructed *κεραφός*, and has been compared to L. *ceruos* 'stag' (*ḱér-u-o-*), W. *carw* (*ḱér-u-o-*), OP *sirwis* (*ḱér-u-o-*), Lith. *kárve* / SCr. *kràva* 'cow' etc. (§ 4).³⁶ This reconstruction of the Greek form (with these comparisons) already makes *κεραός* suspiciously notable in one respect. The

³³ Even though they are relatively rare and late (cf. Sommer *Nominalkomp.* 18). For compounds meaning 'horned', -*κερως* remains normal (e.g. Aesch. *βού-*, Eurip. *ταυρό-*).

³⁴ Schmidt (*Neutra*, 367 f.) already pointed out that compounds in oblique -*κερητ-* are very likely to be "learned" analogical formations, and more specifically, he explained them either as pseudo-Ionic for -*κερᾱτ-* or as secondary *t*-stems (cf. II b, note 6) with the nominative -*κερής* as the point of departure (*γέλως* : *γέλωτ-* = -*κερως* : -*κερωτ-* = -*κερης* : -*κερητ-*). The -*κερήος* / -*κερήα* type was also taken by Schmidt to be analogically created on the basis of a nom. -*κερής*.

³⁵ See Frisk *GEW* 1, 826 f.; Chantraine *DELG*, 518 for a selection.

³⁶ e.g. Pokorny *IEW*, 576; Frisk *GEW* 1, 825 f.; Chantraine *DELG*, 517.

forms being compared—from Indic, Latin, Celtic, Baltic, Slavic, and (indirectly) Tocharian—are all substantives. This would suggest that PIE *ḱer(h₂)mo-* was an adjective that happens to have been substantivized everywhere but in Greek.

The decisive objection, however, is that this interpretation of *κεράος* requires a PIE *ḱerh₂u-* 'horn', which is contradicted by all the available evidence that is unambiguous (§ 6). A less decisive objection is the syllabification *ḱerh₂mo-* instead of the *ḱerh₂umo-* (> Gk. *κερούς) that would have been phonologically regular in PIE.

On the positive side, nothing in the Greek situation particularly favors a *κεράφο-* over the obvious alternative. Given that the normal word for 'horn' is *κέρας*, the most straightforward analysis of the adjective for 'having horn(s)' would be *κεραῖο-* in the first place.³⁷ The non-contraction of the adjective (4x *Il.* in the phrase ἔλαφον κεραόν; 1x *Od.* ἄρνες ... κεραοί) compared with the contracted compound ὑψί-κερων (from phonologically identical -κεραῖο-) provides no argument in favor of simplex *κεράφο-*, especially since this amounts to a comparison of an Iliadic repeated expression to a form that occurs only once and only in the *Odyssey*. The post-Homeric occurrences of the adjective have no independent value. It occurs only in poetic texts, where it may well be borrowed from the epic dialect.

47.2 There is, however, one further form that may be relevant. It is found only in Hesychius:

κάρα· αἵξ ἡμερος Πολυρρήνιοι. ὑπὸ Γορτυνίων ... ἄλλοι δέ ἡ συκῇ.³⁸ Ἴωνες τὰ Πρόβατα. καὶ τὴν κεφαλὴν.

The meanings 'head' and 'tame goat' (indicating a Cretan feminine substantive) both point to *κάρα* for the actual shape of the word. But if there is in addition a homonymous Ionic plural/collective meaning 'cattle', its -*ā* would result from contraction. Ionic *κάρα* 'cattle' and Cretan *κάρα* 'tame goat' could be combined by way of a feminine *καραῖα*/neut. pl. *καραῖα*. The fem. (with contraction to *καρά*) would have been substantivized to a word for 'goat' in Cretan, while neut. pl. *καραῖα* (> *καρά*), also substantivized, became an Ionic word for 'cattle'. As for the *καραῖα* itself, one could either assume assimilation of *καραῖα*-

³⁷ Chantraine *DELG*, 517 (hesitantly) and Frisk *GEW* 1, 826 take compositional -κεραος/-κερωος as from -κεραῖο-, but simplex *κεράος* from *κεράφο-* (see previous note). But cf. already Danielsson *Gramm. und Etym. Studien* I, 30, note 2.

³⁸ Latte *Hsch.* 2, 41 (note to gl. 755) doubts whether the word really could mean 'fig' and refers to 412, gl. 762 (κάραι· συκαῖ) as a second example of confusion with *κράδη*.

ǎ (= fem./neut. pl. of Hom. $\kappa\epsilon\rho\alpha(h)-\acute{o}-$) to $\kappa\alpha\rho\alpha h-\acute{a}$ or, somewhat more elaborately, one might wish to think of an actual $\hat{k}\acute{r}'-h_2-s-o-$ 'horned' derived from $\hat{k}\acute{e}r-h_2-s$ 'horn' at a much earlier stage. All in all, the first solution seems preferable in view of $\kappa\epsilon\rho\alpha\acute{o}\varsigma$ itself. If the accentuation is $\kappa\acute{\alpha}\rho\acute{\alpha}$, this would be a case of retraction connected with substantivization, and it could well be that the substantivization took place after contraction ($\kappa\alpha\rho\alpha h\acute{a} > \kappa\alpha\rho\acute{a} \rightarrow$ subst. $\kappa\acute{\alpha}\rho\acute{\alpha}$ for the Cretan form). All this is less than absolutely sure, but if there is a $\kappa\acute{\alpha}\rho\acute{\alpha}$ in Cretan and/or Ionic at all with the meanings reported by Hesychius, and if they reflect 'horned', a basic $\kappa\alpha\rho\alpha h-\acute{a}$ is the obvious choice.

III b. $\hat{k}_r-h_2-s(e)n-$ and \hat{k}_r-h_2-os 'head'

48.1 In the last section (§§ 40–47), it was suggested that there were serious difficulties involved in viewing \hat{k}_r-h_2-s 'horn' ($\kappa\acute{\epsilon}\rho\alpha\varsigma$) and \hat{k}_r-h_2-os 'head' ($\acute{s}ir\acute{a}s-/sarah-$) as divergently levelled outcomes of a single PIE paradigm. It was concluded from this that there were two derivational histories to be described, and a specific proposal for one of them (that of $\kappa\acute{\epsilon}\rho\alpha\varsigma$) was given. It has already been indicated (§ 43.1) that the general direction to be taken ought to be, as it seems, a derivational connection between $\hat{k}_r-\acute{e}h_2$ 'head' ($\kappa\acute{\alpha}\rho\alpha$ etc.) and \hat{k}_r-h_2-os 'head'. All the details, however, remain to be settled.

48.2 The s -stem \hat{k}_r-h_2-os as such is found only in Indo-Iranian. The sole occurrence of the stem in Avestan is the locative plural *sarahu* (Yt. 10.40). This makes it practically sure that the word was inflected as an s -stem throughout its paradigm in Avestan. In Sanskrit, on the other hand, the corresponding $\acute{s}ir\acute{a}s-$ is found only as the nom.-acc. sg. All other forms of the simplex paradigm show a stem $\acute{s}ir\acute{s}(\acute{a})n-$. This is practically exceptionless in the early language.¹ This Sanskrit situation is generally considered more archaic than the apparent Avestan one for at least two reasons. There is comparative evidence that not only supports a $\hat{k}_r-h_2-s(e)n-$ 'head', but agrees with Vedic in excluding this n -stem from the neuter nom.-acc. (§ 18 ff.). Furthermore, the assumption of an Iranian paradigmatic levelling of $\acute{s}ir\acute{a}s/\acute{s}ir\acute{s}(a)n-$ to $\acute{s}ir\acute{a}s-$ throughout is favored by the same eventual development in Sanskrit, where a "normal" s -stem paradigm of $\acute{s}ir\acute{a}h$ (inst. $\acute{s}ir\acute{a}s\acute{a}$, pl. $\acute{s}ir\acute{a}msi$ etc.) finally comes into being. It is important to note at the same time, however, that there can be no general argument made in this area to the effect that a heteroclitic paradigm *per se* is bound to be older than a nonheteroclitic one (§ 7.1).

The next task, at any rate, must be the examination of the evidence for $\hat{k}_r-h_2-s(e)n-$ in Greek and Germanic. The Greek forms present various problems of detail, and their analysis will require an excursus. This will be the content of § 49. Afterwards, there will be some conclusions

¹ W-D 3, 315 f.

to be drawn from a comparison of the paradigm $\hat{k}r-h_2-os/\hat{k}r-h_2-s(e)n-$ of Skt. with the $\hat{k}r-\acute{e}h_2/\hat{k}r-h_2-s(e)n-$ presented by Greek. (III c. §§ 51 ff.)

49. $\hat{k}r-h_2-s(e)n-$ in Greek²

49.1 What most requires attention here is the variety of forms in which this stem appears as the oblique of $\acute{\kappa}\alpha\rho\acute{\alpha}$ / $\acute{\kappa}\alpha\rho\eta$, and this may be dealt with first. Some of the derivatives of oblique $\hat{k}r-h_2-s(e)n-$, however, are of help in this question, and will be introduced from time to time.

The greatest variety of all is to be found already in the Homeric situation. Here are found four different oblique stems to $\acute{\kappa}\alpha\rho\eta$ 'head':

- 1) $\kappa\rho\acute{\alpha}\alpha\tau-$ ($\kappa\rho\acute{\alpha}\alpha\tau\omicron\varsigma$, $\kappa\rho\acute{\alpha}\alpha\tau\iota$, $\kappa\rho\acute{\alpha}\alpha\tau\alpha$)
- 2) $\kappa\alpha\rho\eta\alpha\tau-$ ($\kappa\alpha\rho\eta\acute{\alpha}\tau\omicron\varsigma$, $\kappa\alpha\rho\eta\acute{\alpha}\tau\iota$, $\kappa\alpha\rho\eta\acute{\alpha}\tau\alpha$)
- 3) $\kappa\alpha\rho\eta\tau-$ ($\kappa\alpha\rho\eta\tau\omicron\varsigma$, $\kappa\alpha\rho\eta\tau\iota$)
- 4) $\kappa\rho\acute{\alpha}\tau-$ ($\kappa\rho\acute{\alpha}\tau\omicron\varsigma$, $\kappa\rho\acute{\alpha}\tau\iota$, $\kappa\rho\acute{\alpha}\tau\alpha$)

All of these, in turn, must be related to the synchronically independent word $\acute{\kappa}\alpha\rho\eta\nu-\alpha$ 'heads, peaks' beside $\kappa\rho\acute{\alpha}\nu-\acute{\iota}\omicron\nu$ 'skull', $\kappa\rho\acute{\alpha}\acute{\iota}\omega/\kappa\rho\eta\eta\nu\alpha$ 'accomplish' etc.

49.2 For the question of the oblique stems, the systematic replacement in Greek of all neuter oblique stems in $-(C)en-/-(C)n-$ by structures in $-(C)\eta\tau-$ (descriptively speaking) makes it impossible to tell from the Greek paradigm itself exactly what kind of neuter n -stem gave rise to $\kappa\rho\acute{\alpha}\alpha\tau-$ etc. here. More specifically, the Greek situation alone offers no information concerning the original paradigmatic ablaut displayed by the neut. n -stem oblique forms in question, and the available evidence thus reduces to Vedic $\acute{s}r\acute{h}n-$ and whatever can be inferred from it.

Neuter n -stems that provide oblique case forms³ in Vedic appear either with zero-grade $-(C)n-$, or with a syllabic $-Can-$. The oblique

² In general, cf. Danielsson *Gramm. und etym. Studien* I—esp. 15 ff., 36 f., 41 f. This work is essentially a monograph on $\acute{\kappa}\alpha\rho\alpha$, $\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$ etc., and is mainly useful nowadays as a collection of material—Greek material in particular and including attestations from late sources. Otherwise, we have here a compendium of practically every IE form that has been etymologically referred to the Greek words in question (both those that are retained in the modern handbooks and some that are not) together with (partly obsolete) analyses of the entire group. Cf. also Schmidt *Neutra*, 363 ff.—esp. 374 ff.; Leumann *HomW*, 159; Egli *Heteroklisie*, 31 f., 57 f.; Risch, *SMEA* 1, 61 ff.; Peters *Untersuchungen*, 277 ff.

³ The locative, of course, systematically differs in structure from the other singular oblique cases and is not taken into account here.

suffix shape *-Can-* is regular in the great majority of neuter *-man-* and *-van-* stems, appearing in all nouns of those two types except those made on a root of the shape (C) $\bar{C}\bar{a}$ -. Thus we find *pátman(-ā)*, *sádman(-as)*, *bráhman(-ā, -e, -as)*, *vásman(-as)*, *śákman(-ā)*, *kárman(-ā, -e, -as)*, *bhū́man(-ā, -as)*, *dhánvan(-ā, -as)*, *párvan(-ā, -as)* etc. In theory, the *-man-* oblique stem allomorph could reflect the syllabic Sievers alternant *-m̥n-* (with *-van-* analogical to this in place of original *-un-*).⁴ But especially in view of the Gathic *man-* stem genitive *-mən̥g* (YAv *-man*) < *-man-s* < *-men-s*, it is more likely that Ved. *-man-* and *-van-* are simply the direct continuations of the original full-grade *-men-* and *-uen-* of the oblique of inherited proterokinetic ($\acute{m}n$) / *-mén-* and ($\acute{u}r$) / *-uén-* stems. No other neuter oblique forms have a syllabic *n-* stem suffix.

Instead, the remaining neuter *-(C)an-* stems show a zero-grade *-(C)n-* allomorph in their oblique cases. And it is to this second and larger group, of course, that *śīrṣṇ(-ā, -e, -as)* descriptively belongs. The neuter obliques in *-(C)n-* can be subdivided into four groups:

a) While most neuter *man-* and *van-* stems, as already noted, keep the full-grade shape of the suffix (*-man-*, *-van-*) that was original in the oblique forms of their (proterokinetic) paradigms, one clearly identifiable group has replaced these *-man-* and *-van-* allomorphs with zero-grade *-mn-* and *-vn-*. These are the *man-* and *van-* stems made on roots of the shape (C) $\bar{C}\bar{a}$ -. Examples are: *dám̐n(-ā, -as)*, *dhám̐n(-ā, -e)*, *nám̐n(-ā)*, *sám̐n(-ā, -e, -as)*, *snáv̐n(-ā)*. The only Vedic instance of this phenomenon in a neuter *man-* or *van-* stem to a root of any other shape is that of RV abl. *lóm̐n-as* (with AV inst. *lóm̐n-ā*). It may also be noted that the replacement of oblique (C) $\bar{C}\bar{a}man-$ / (C) $\bar{C}\bar{a}van-$ by (C) $\bar{C}\bar{a}mn-$ / (C) $\bar{C}\bar{a}vn-$ is by no means exceptionless in RV, for one also finds *tráman(-e)*, *dáman(-e, -as)*, and *yáman(-as)*, which appear simply to preserve their original (proterokinetic) suffixal ablaut. Although it is unclear why this one set of *man-* and *van-* stems should have innovated⁵ in this way, the development is clearly the exception rather than the rule for the proterokinetic neuter oblique *n-* stems in question.

⁴ So W-D 3, 268.

⁵ That *-mn-* and *-vn-* are newer replacements of *-man-* and *-van-* in these obliques is suggested by more than one consideration:

a) None of the oblique forms of neuter (C) $\bar{C}\bar{a}man-$ stems shows the reduction that occurred in original *-mn-* clusters (RV gen. sg. *ás̐n-aḥ* = Av. *aśn-ō*, RV inst. sg. *ás̐n-ā* : RV nom. *ás̐mā*, Av. *asmān-* 'stone, heaven'; Gk. *ἄμων* 'anvil'; Lith. *akmuō* 'stone', with

b) Inherited acrostatic r/n stems consistently keep their zero-grade oblique suffixal allomorph in Vedic. Belonging here would be $yak-n-$ 'liver' and probably $as-n-$ 'blood'.⁶

c) The same is true of Vedic reflexes of original amphi- or hystero-kinetic (morphologically collective) r/n stems. Oblique $ud-n-$ 'water' probably owes its suffixal zero grade (and its zero root vocalism too, for that matter) to a PIE pre-form $ud-n-(\acute{e}s$ etc.) in an amphikinetic paradigm (nom-acc $yédōr$).⁷

d) Secondary heteroclitics in Vedic (i/n and $zero/n$ stems—§§ 19.2, 54) also show a zero-grade suffix in their n -stem oblique forms: $akṣ-ṇ-$ 'eye', $asth-n-$ 'bone', $ās-n-$ 'mouth', $yūṣ-ṇ-$ 'broth'. If, as seems likely, these secondary heteroclitics were modelled on the original ones (r/n and l/n stems), and if they were not inherited, but rather were independently created in any language that has them, one possible view is that the Vedic examples of the type ($akṣ-ṇ-$ etc.) show zero-grade $-n$ because they have adopted this feature from their models ($asth-n-$ like $yak-n-$, $yūṣ-ṇ-$ like $ud-n-$ etc.). The only other possibility is that the secondary heteroclitics ($ās-n$ -type) were once proterokinetic, but have introduced zero-grade suffixal vocalism into their oblique stems along with the $-man-$ and $-van-$ stems ($nāmn-$, $snāvn-$) that show that innovation. This second view of the matter, however, is not plausible. There is

$-mn-$ > $-n-$. Cf. J. Schmidt, *Kritik der Sonantentheorie*, 101 ff. Or cf. Ved. $kārman-$: $vīrā-karma-$ etc. with apparent $-mn-$ > $-m-$, and J. Schmidt, *op. cit.*, 93 ff.; W-D 2.1, 115, 118; addendum to § 33.6 above).

b) Oblique stems in (C) $Cā-man-$ (with a full-grade suffix that both agrees with that of the majority of neuter man -stems and is probably original) are still found in some instances.

c) $snā-vn-$, for its part, must be a recent creation in any case, since it cannot be the outcome of an old $sneh_1-un-$ with zero-grade suffix.

In any event, Hittite $lāman/lamnaš$ 'name' does not support the antiquity of the Vedic stem shape $nāmn-$ very strongly. For if the Vedic oblique appears in and of itself to be an innovation—and if, more specifically, it is ultimately to be seen as an amphikinetic ($-mō(n)$ / $-mn-es$) oblique that has been secondarily associated in Vedic with a proterokinetic nom.-acc. (so Schindler, *Flex. und Wortbildung*, 263)—and if in addition Germanic has evidence of an amphikinetic paradigm of 'name' (Goth. $namō$, OHG $namo$, OE $nama$ etc.) that is old enough to have undergone Osthoff's Law in the root syllable of the original oblique ($nōmn-$ > $namn-$) and generalized the resulting a -vocalism, it is difficult to exclude the possibility that Hittite $lāman/lamnaš$ simply continues the original amphikinetic neuter paradigm unchanged.

⁶ Cf. Schindler, *BSL* 70, 4 ff.

⁷ Schindler, *BSL* 70, 3 f.

no particular reason why these secondary heteroclites should have been proterokinetic in the first place. But even if they could have been, the substitution in question (cf. $-mn\text{-}$ for $-man\text{-}$ in neuter obliques) is anything but a general development for which any given neuter proterokinetic oblique $n\text{-}$ stem might have been eligible in principle. Among the neuter $man\text{-}$ and $van\text{-}$ stems, it affected only a rather restricted and easily definable subset. It is consequently better to see the $-n\text{-}$ of $asth\text{-}n\text{-}$, $\bar{a}s\text{-}n\text{-}$ etc. as directly imitated from $yak\text{-}n\text{-}$, $as\text{-}n\text{-}$ etc., where the zero vocalism of the suffix is original.

Returning to the Ved. oblique $\acute{s}ir\acute{s}n\text{-}$, the range of possibilities remains the same. Either the final suffix has had zero grade ever since this oblique stem was created, or else it was a proterokinetic oblique (whether $\hat{k}r\text{-}h_2\text{-}s\acute{e}n\text{-}$, $\acute{s}\acute{r}\acute{s}an\text{-}$ or whatever) that has substituted zero for full grade. With certain additional hypotheses concerning the morphological analysis and derivational history of the paradigm that ultimately gave rise to oblique $\acute{s}ir\acute{s}n\text{-}$, one could probably make out a case for original proterokinetic inflection here.⁸ But in the absence of a compelling reason to suppose that a theoretical proterokinetic $*\acute{s}ir\acute{s}an\text{-}$ (or $*\acute{s}\acute{r}\acute{s}an\text{-}$) shared the exceptional development seen in some (C) $C\bar{a}\text{-}man\text{-}$ obliques (the ones that became (C) $C\bar{a}\text{-}mn\text{-}$), it seems safer to expect that an oblique $*\acute{s}ir\acute{s}an\text{-}$ would have had the treatment more regularly shown by proterokinetic neuter $n\text{-}$ stem obliques—namely, the retention of full grade in the $n\text{-}$ stem suffix. And since it would be completely arbitrary to entertain the idea of a reduction ($*\acute{s}ir\acute{s}an\text{-}$ to $\acute{s}ir\acute{s}n\text{-}$) that had no direct connection with the one seen in $n\bar{a}mn\text{-}$ etc., it appears that $\acute{s}ir\acute{s}n\text{-}$ was either formed as an acrostatic or amphikinetic (or hysterokinetic) oblique in the first place, or else that it was modelled on one of these types (all of which have a zero-grade oblique $n\text{-}$ stem suffix in Vedic).

49.3 If, as a next step, it may be concluded that the suffixal zero grade of Ved. $\acute{s}ir\acute{s}n\text{-}$ is an original feature of this $n\text{-}$ stem, and if in addition the Greek oblique(s) $\kappa\rho\acute{\alpha}\alpha\tau\text{-}$ (etc.) should really be directly identified with $\acute{s}ir\acute{s}n\text{-}$, we would probably do best to suppose that both Ved. $\acute{s}ir\acute{s}n\text{-}$ and Gk. $\kappa\rho\acute{\alpha}\alpha\tau\text{-}$ reflect a stem of the shape $\hat{k}r\text{-}h_2sn\text{-}$. For proto-Greek, this means a paradigm that included the structures:

⁸ So now Peters *Untersuchungen*, 244 under the two assumptions that 1) Gk. $\kappa\rho\acute{\alpha}\alpha\tau\text{-}$ = Ved. $\acute{s}ir\acute{s}n\text{-}$ ultimately reflect the oblique of an $r/n\text{-}$ stem and 2) that $-C(e)r/-C(e)n\text{-}$ stems mostly inflected proterokinetically. I cannot subscribe to the first view (cf. § 9.7.2).

nom-acc		$\acute{k}r\text{-}h_2\text{-}sn\text{-}h_2$
gen.	$\acute{k}r\text{-}h_2\text{-}sn\text{-}os$	$\acute{k}r\text{-}h_2\text{-}sn\text{-}\bar{o}n$
loc.	$\acute{k}r\text{-}h_2\text{-}sn\text{-}i$	$\acute{k}r\text{-}h_2\text{-}sn\text{-}si$

The reconstruction of the nom-acc pl. is based on the principle that Greek neuter nom-acc plurals, as a rule, have a stem that is apophonically identical to that of the oblique (although there may be an accentual distinction). And an n -stem nom-acc pl. in $-n\text{-}h_2$ is probably to be considered a Gk. creation, since neut. n -stem nom-acc plurals in PIE were probably of the type $-\bar{o}n$ or $-\bar{e}n$ (and cf. RV $\acute{s}ir\acute{s}\acute{a}$ 'heads').

In addition, the stem in n found everywhere except the nom-acc sg. in the 'head' paradigm would have been monosyllabic in the sg. oblique cases, and in the gen. pl. as well. Greek consistently accents athematic case-forms of this structure in a characteristic way.⁹ And since the characteristic treatment in question is itself to be considered an archaism, it would seem legitimate to assume that the early paradigm suggested above had something like the accentual pattern that is retained even much later by members of athematic noun paradigms that are monosyllabic without their case-ending.

Without going into absolutely all the details, athematic neuter substantives (and the situation is only slightly different for athematic non-neuters) regularly accent the ending in the gen. sg., dat. sg., and dat. pl. if only one syllable precedes any of these endings. Thus the familiar patterns:

nom-acc	(γόνυ)	(γόνυ-α)	(πῦρ)	(σκάτ)
gen.	γόνυ-ός	(γόνυ-ων)	πυρ-ός	σκατ-ός
dat.	γόνυ-ί	γνυ-σί (App. II, n. 2)	πυρ-ί	σκατ-ί

This is so characteristic, in fact, that neuter t -stems that have become monosyllabic only by contraction—and therefore late—secondarily adopt the accentual pattern of original monosyllabic stems. In the word for 'ear', for example:

gen.	οὐατος > * $\acute{\omega}$ τος → $\acute{\omega}$ τός
dat.	οὐατι > * $\acute{\omega}$ τι → $\acute{\omega}$ τί οὐασι > * $\acute{\omega}$ σι → $\acute{\omega}$ σί

Outside monosyllabic-stem forms in these three cases, the accent of neuter consonant stems is basically simply recessive. This means that, in principle, all nom-accusatives (sg. and pl.), no matter how many syllables they contain, have recessive accent. And although the situation is

⁹ On this point and those immediately following cf., e.g., Vendryes *Traité*, 218 ff., 178.

complicated and partly unclear, the majority of athematic neuter genitive plurals also seem to be recessive—again regardless of how many syllables precede the ending. Finally, all relevant neuter forms in which more than one syllable precedes the ending are simply recessive—or rather eventually became so. At exactly what stage this accentual retraction took place, however, is quite unclear. Found in the end, at any rate, are:

a) monosyllabic but recessive

nom-acc sg. σκῶρ, πῦρ ('more recessive' than (*)σκῶρ, *πῦρ)
 nom-acc pl. ἄστρο-α(?),¹⁰ γόνϜ-α / δόρϜ-α; secondary ὤτα
 gen. pl. γόνϜ-ων / δόρϜ-ων; secondary ὤτων

b) polysyllabic and therefore recessive throughout:

ἦπαρ μέλι τέρμα γένος γέρας (F)άστν
 ἦπατ- μέλιτ- τέρματ- γένε(h)- γέρα(h)- (F)άστε(F)-

Applying this general Greek schema to the preforms above in the proto-Greek paradigm of 'head', one might conjecture:

n-a		$k_fh_2sn-h_2$
gen.	$k_fh_2sn-ós$	$k_fh_2sn-ōn$
loc.	$k_fh_2sn-í$	$(k_fh_2sn-si: \text{accent?})$

The gen. sg., loc. sg., and gen. pl., showing a monosyllabic stem-shape in an athematic neuter, might well be supposed to have had or acquired the accentual pattern of e.g. γονϜ-ός, γονϜ-ί, γόνϜ-ων already at the stage envisioned here, since that pattern is basically an archaism. In the gen. plural, to be sure, the situation is less clear. For the nom-acc pl., which is probably a Greek creation (cf. § 49.3 above), no matter how early a creation it may be, the assumption of initial accentuation is practically inevitable, if only because of the extreme difficulty of justifying anything else—either at an early stage or (even more so) at a later one. If, of course, it was already the rule in rather early Greek that athematic neuters with polysyllabic stems had recessive accent, then $k_fh_2sn-h_2$ would be assured in any event. But the situation that gave way to recess-

¹⁰ ἄστροα would belong here

1) if it is an inner-Greek creation made simply by affixing the normal nom.-acc. pl. neut. ending -α to an original monosyllabic oblique stem ἄστρο- (ός etc.) of ἀστήρ. (This oblique eventually became ἀστέρ-).

2) if it is older and reflects $h_2st_f-h_2$ (which, however, does not seem likely).

If ἄστροα most immediately reflects something like $h_2ast_f-h_2$, then it could be recessive because the stem was disyllabic.

sive accent for polysyllabic-stemmed neuters might have been mobile accent (of the sort preserved by neuters with monosyllabic stems) in any case. And this too would suggest initially accented $\hat{k}r\text{-}h_2sn\text{-}h_2$ in the nom-acc pl. But in the case of the loc. pl. $\hat{k}r\text{-}h_2sn\text{-}si$ (and the inst. pl. $\hat{k}r\text{-}h_2sn\text{-}phi$ as well), it is impossible to tell whether an original (?) mobile accent $\hat{k}r\text{-}h_2sn\text{-}sí$ ($\hat{k}r\text{-}h_2sn\text{-}phí$) was still there at the stage we are considering, or whether retraction in this disyllabic stem had already produced $\hat{k}r\text{-}h_2sn\text{-}si$ ($\hat{k}r\text{-}h_2sn\text{-}phi$). Nor is any really decisive information available from any eventually attested dat.-loc. or inst. plural (cf. § 49.11 f.).

49.4 It is also a view expressed more than once¹¹ that the two different Greek outcomes of (C) $\hat{R}HC$ (and (C) $\hat{N}HC$) depend on whether or not the syllabic element was (or rather came to be) accented. The general idea is that $\hat{R}HC$ comes out $\check{V}R\check{V}C$, while $\hat{R}HC$ comes out $R\check{V}C$. For the stem in which we are interested, this would mean that proto-Greek $\hat{k}r\text{-}h_2sn\text{-}$ became eventual *karahn-*, but $\hat{k}r\text{-}h_2sn\text{-}$ became *krāhn-*. Here we may simply note that tracing the disyllabic reflex to accented $\hat{R}HC$ and the monosyllabic one to unaccented $\hat{R}HC$ seems to work out quite well for the various simplex derivatives of $\hat{k}r\text{-}h_2sn\text{-}$ that are to be found in Greek.

a) $\kappa\rho\alpha\nu\acute{\iota}\omicron\nu$ 'crown of the head, skull' (Hom +) may be analyzed in more than one way. But a *krāhn-* 'head' : *krāhn-íō-* 'crown' looks semantically parallel to other Greek pairs like $\mu\eta\rho\acute{\omicron}s$ 'thigh' : $\mu\eta\rho\acute{\iota}\alpha$ (neut. pl.) 'thigh bones'. Elsewhere, one thinks of RV *ās* 'mouth' (inst. *ās-ā*) : *ās-íyam* 'id.' and/or L. *cor* ($\hat{k}rd$) 'heart': Irish *cride* ($\hat{k}rdi\acute{o}n$) 'id.' In addition, $\kappa\rho\alpha\nu\acute{\iota}\omicron\nu$ itself is reminiscent of $\iota\sigma\chi\acute{\iota}\omicron\nu$ 'hip joint' and $\iota\nu\acute{\iota}\omicron\nu$ 'occiput'. In any case, $\kappa\rho\alpha\nu\acute{\iota}\omicron\nu$ presents a combination of the unaccented stem of the derivational basis and an eventual outcome $\kappa\rho\alpha\acute{h}v\text{-}$ before an accented $\acute{\iota}\omicron\text{-}$ that has parallels.

$\kappa\rho\alpha\acute{\iota}\nu\omega$ 'accomplish, rule' (Hom +) is traditionally taken to be a denominative derived from $\hat{k}r\text{-}h_2sn\text{-}$ 'head' reflecting $\hat{k}r\text{-}h_2sn\text{-}ie/o\text{-}$.¹² One may either assume that Greek had already imposed recessive accent on all present stems when the various treatments of $\hat{R}H$ occurred, or that the inherited accent was still preserved at that stage. In either case, the r of Greek $\hat{k}r\text{-}h_2sn\text{-}iei$ etc. would have been unaccented, since a recessive accent would have fallen on the n in most forms, and the inherited

¹¹ Rix *Hist Gramm Gr*, 73 f. But cf. also Peters *Untersuchungen*, 29. Whether $C\hat{R}H_xC$ comes out CV_xRV_xC or $C\alpha RV_xC$ in Greek in the first instance is not crucial to the present point.

¹² Semantically, this $\hat{k}r\text{-}h_2sn\text{-}(ie/o\text{-})$ is comparable to the $\hat{k}r\text{-}ēh_2$ of $\kappa\rho\alpha\acute{\alpha}\text{-}(\delta\omicron\upsilon\acute{\epsilon}\omega)\text{-}$ § 23.

accent for such a denominative would have been on the $-ie/o\text{-}$ suffix (cf. RV *udan-yá-*, *ukšan-yá-* etc.). Here again an unaccented $\hat{k}f\text{-}h_2s(n)\text{-}$ has become $\kappa\rho\tilde{\alpha}h(av)\text{-}$. Once $\kappa\rho\tilde{\alpha}h\text{-}$ developed in the present, it would serve as the basis for the (re)formation of the aorist as well, and $\kappa\rho\eta\eta\alpha$ (as if with $\kappa\rho\tilde{\alpha}h\text{-}h\text{-}$ from accented $*\hat{k}f\text{-}h_2san\text{-}$) is thus of no use as counterevidence.

$\kappa\rho\tilde{\alpha}n\acute{\iota}on$ and $\kappa\rho\tilde{\alpha}n\acute{\iota}ow$ are apparently contradicted only by the Hsch. gloss $\kappa\rho\tilde{\alpha}na\text{'}$ κεφαλή. But it is not entirely certain that this word really existed (cf. Latte *Hsch.*, *ad loc.*).

b) Doric $\acute{\kappa}\alpha\rho\alpha\nu\acute{o}s$ 'chief' (Xen.) appears to reflect a $\hat{k}f\text{-}h_2sn\text{-}o\text{-}$ '(the one) at the head' (cf. also Cret. PN $\acute{\kappa}\alpha\rho\alpha\nu\acute{o}s$, Collitz-Bechtel 5016.3, Bechtel *Hist. Personennamen* 513). The form is presumably $\acute{\kappa}\alpha\rho\tilde{\alpha}n\acute{o}s$ then, and this is supported by the (necessarily Aeolic) word $\acute{\kappa}\alpha\rho\tilde{\alpha}n\nu\acute{o}s$ quoted by Hesychius. The analysis $\hat{k}f\text{-}h_2sn\text{-}o\text{-}$ '(thing) on the head, head-gear' makes perfect sense for Hesychius' glosses $\kappa\epsilon\kappa\rho\tilde{\upsilon}\phi\alpha\lambda\acute{o}s$ 'hair net' and $\kappa\rho\eta\delta\epsilon\mu\nu\acute{o}n$ 'head-wrap', but the word is also said to mean $\xi\rho\iota\phi\acute{o}s$ 'kid, goat' and $\zeta\eta\mu\acute{\iota}\alpha$ 'damage(s), penalty'. The first of these is no real problem (cf. § 49.6c), but the second meaning suggests at best that a homophonous word ultimately belonging with $\acute{\kappa}\alpha\rho\eta\eta\text{'}$ $\zeta\eta\mu\acute{\iota}\alpha$ and/or the $*\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$ of $\kappa\epsilon\rho\alpha\acute{\iota}\zeta\omega$, $\acute{\alpha}\kappa\acute{\epsilon}\rho\alpha\iota\acute{o}s$ (§ 24.5.4) has been included here. This seriously diminishes the value of the whole lemma, however, and nothing much ought to be based on its interpretation.¹³

Another form found only in Hesychius, and transmitted with an accent that would support the view that it is accented (C) $\hat{f}h_2C$ that gives (C) $\alpha\rho\alpha C$, is $\kappa\alpha\rho\acute{\alpha}\rho\alpha\text{'}$ κεφαλή, apparently reflecting $\hat{k}f\text{-}h_2sreh_2$. For the further analysis of this form see §§ 61f., 70.4.

An allegedly Cretan $\kappa\alpha\rho\alpha\nu\acute{\omega}\text{'}$ $\tau\eta\nu$ $\alpha\acute{\iota}\gamma\alpha$, also quotable only from Hesychius, if it has anything to do with $\hat{k}f\text{-}h_2sn\text{-}$ in the first place, would seem at first glance to show an unaccented and therefore unexpected $\kappa\alpha\rho\alpha h\text{-}$. But this is not worth much, since the form is almost sure to be a relatively late endocentric feminizing (or exocentric feminine) derivative in $-\acute{\omega}$ (automatically oxytone) that simply repeats the $\kappa\alpha\rho\alpha h\text{-}$ (or $\kappa\alpha\rho\tilde{\alpha}n\text{-}$) of the derivational basis (on which cf. § 49.6c with ftn. 21).

¹³ Equally untrustworthy (though irrelevant to any role played by the accent in the $\kappa\alpha\rho\alpha h\text{-}/\kappa\rho\tilde{\alpha}h\text{-}$ distinction) is the Hsch. lemma $\kappa\rho\alpha\nu\acute{\alpha}\text{'}$ τόξον. εἶδος δένδρου. περικεφαλαία, under which are combined (real or imaginary) words related to $\hat{k}f\text{-}n(o)\text{-}$ 'horn' (cf. the use of $\acute{\kappa}\acute{\epsilon}\rho\alpha\varsigma$ for 'bow'), $\kappa\rho\tilde{\alpha}n\acute{o}n/\kappa\rho\tilde{\alpha}n\acute{\epsilon}\iota\alpha$ 'cornel-cherry tree' (an entirely unrelated word—cf. L. *cornum*), and $\kappa\rho\tilde{\alpha}n\acute{o}s$ 'helmet' (itself also glossed $\pi\epsilon\rho\iota\kappa\epsilon\phi\alpha\lambda\acute{\alpha}\iota\alpha$ by Hsch.). No useful information can be extracted from all this.

c) Compounds that show a reflex of $\hat{k}r h_2 sn-$ or $\hat{k}r h_2 sr-$ are less likely than simplicia to furnish trustworthy information about whether the accent might have been the factor that conditioned *karasC-* vs. *krāsC-* in these forms. In the first place, it is far from clear that the various compound types in Greek have preserved the accentual characteristics with which a given type was inherited. And if they have changed the place of the accent, it is difficult to know whether this happened before or after the $r h_2$ (> $\alpha r \alpha$ / $\rho \bar{\alpha}$) treatments. In addition, it is a commonplace that stem shapes originally possible only in simplicia can eventually find their way into compounds (e.g. $\kappa \alpha \tau \omega - \kappa \acute{\alpha} \rho \alpha$, § 27). We may therefore simply note that where the stems $\hat{k}r h_2 sn-$ and $\hat{k}r h_2 sr-$ are found in Greek compounds, they occur as second members, and the great majority of the cases combine the outcomes $-\kappa \rho \bar{\alpha} h v-$ and $-\kappa \rho \bar{\alpha} h \rho-$ with an accented first member. Examples include bahuvrihis like $\acute{\epsilon} \kappa \alpha - \tau \acute{o} \gamma - \kappa \rho \bar{\alpha} \nu \omicron \varsigma$ 'hundred-headed' and $\acute{\omicron} \rho \theta \acute{\omicron} - \kappa \rho \alpha \iota \rho \alpha$ 'straight-horned' (cf. § 65 f.), the type $\nu \acute{\alpha} \upsilon - \kappa \rho \bar{\alpha} \rho \omicron \varsigma$ 'captain' (which might also be a bahuvrihi – §§ 61, 70.5), and governing compounds like $\acute{\epsilon} \pi \acute{\iota} - \kappa \rho \bar{\alpha} \nu \omicron \nu$ 'capital'. In addition, it is difficult to see either $-\kappa \rho \alpha \iota \rho \alpha$ or $-\kappa \rho \bar{\alpha} \rho \omicron -$ as simplex stems introduced into these compounds because no such simplicia are found, and it would be possible to view $-\kappa \rho \bar{\alpha} \nu \omicron -$ as such only if Hsch. $\kappa \rho \acute{\alpha} \nu \alpha$ – under a) above – is genuine. The indications offered by $-\kappa \rho \alpha \iota \rho \alpha$, $-\kappa \rho \bar{\alpha} \rho \omicron -$, and $-\kappa \rho \bar{\alpha} \nu \omicron -$, however, appear to be invalidated by the existence of a series of compounds in $-\kappa \alpha \rho \eta \nu \omicron \varsigma$ (e.g. Hom $\omicron \upsilon \lambda \omicron - \kappa \acute{\alpha} \rho \eta \nu \omicron \varsigma$ 'wooly-headed') if these are taken to show that Greek bahuvrihis in $\acute{x} - \hat{k}r h_2 sno-$ could develop not only to $\acute{x} - \kappa \rho \bar{\alpha} h v \omicron -$ ($\acute{\epsilon} \kappa \alpha \tau \acute{o} \gamma - \kappa \rho \bar{\alpha} \nu \omicron \varsigma$ etc.) but to $\acute{x} - \kappa \alpha \rho \alpha h v \omicron -$ (> $x - \acute{\kappa} \acute{\alpha} \rho \bar{\alpha} \nu \omicron -$) as well. But while $-\kappa \rho \alpha \iota \rho \alpha$, $-\kappa \rho \bar{\alpha} \rho \omicron -$, and even $-\kappa \rho \bar{\alpha} \nu \omicron -$ are unlikely to be simplex stems later used in compounds, there is an obvious simplex that could have been employed in this way to produce the $-\kappa \alpha \rho \eta \nu \omicron -$ compounds. This, of course, is Hom. $\kappa \acute{\alpha} \rho \eta \nu \alpha$ in the meaning 'heads' (§ 49.6).

Finally, it may be noted that it is not absolutely necessary for present purposes to insist upon the accent-conditioned view of the two outcomes of (C) $\hat{r}HC$ in Greek. It will become clear in any case (§§ 49.5 ff.) that the di-syllabic treatment was in fact what happened in the nom-acc pl. and in the gen. pl. as well. It will also prove necessary to suppose, however, that the monosyllabic treatment occurred somewhere in this paradigm too. And the oblique cases that should have been historically ending-accented are practically the only place left for this to have happened.

49.5 To the extent that conclusions may be drawn from the derivatives that point to $\acute{\kappa}\alpha\rho\alpha\eta\nu-$ vs. $\kappa\rho\tilde{\alpha}\eta\nu-$,¹⁴ the Greek paradigm for 'head' would have become:

sg: ($\hat{k}r\tilde{\alpha}h_2 > \acute{\kappa}\alpha\rho\tilde{\alpha}$ ¹⁵)	pl: $\hat{k}r\tilde{h}_2sn-h_2 > \acute{\kappa}\alpha\rho\alpha\eta\nu\alpha$
$\hat{k}r\tilde{h}_2sn-\acute{o}s > \kappa\rho\tilde{\alpha}\eta\nu-\acute{o}s$	$\hat{k}r\tilde{h}_2sn-\acute{o}n > \kappa\alpha\rho\alpha\eta\nu\omega\nu >$
	$\kappa\alpha\rho\acute{\alpha}\eta\nu\omega\nu$
$\hat{k}r\tilde{h}_2sn-\acute{i} > \kappa\rho\tilde{\alpha}\eta\nu-\acute{i}$	($\hat{k}r\tilde{h}_2sn-si/-phi$)

Of the singular oblique forms with $\kappa\rho\tilde{\alpha}\eta\nu-$ plus accented endings there is no direct trace. But purely in phonological terms, the plural $\acute{\kappa}\alpha\rho\alpha\eta\nu\alpha/\kappa\alpha\rho\acute{\alpha}\eta\nu\omega\nu$ could be represented by forms of the type (Hom.) $\acute{\kappa}\alpha\rho\eta\nu\alpha/\kappa\alpha\rho\acute{\eta}\nu\omega\nu$. To make this the actual historical interpretation of these forms requires

- 1) that $\acute{\kappa}\alpha\rho\eta\nu\alpha$ originally meant 'heads'.
- 2) that the paradigm $\acute{\kappa}\alpha\rho\eta\nu\alpha/\kappa\alpha\rho\acute{\eta}\nu\omega\nu$ was a neuter n -stem paradigm to begin with, and not thematic.
- 3) that only the plural forms that show $\kappa\alpha\rho\eta\nu-$ are original (the singular being $\acute{\kappa}\alpha\rho\tilde{\alpha}/\kappa\rho\tilde{\alpha}\eta\nu-$ in the first instance). All three seem probable or at least plausible on the basis of the particulars of the usage and appearance of $\acute{\kappa}\alpha\rho\eta\nu\alpha/\kappa\alpha\rho\acute{\eta}\nu\omega\nu$ in Homer.

49.6 It is generally recognized in any case¹⁶ that $\acute{\kappa}\alpha\rho\eta\nu\alpha$ simply means 'heads'. As far as Homer is concerned, this is borne out by periphrases such as $\beta\omicron\omega\nu \iota\phi\theta\iota\mu\alpha \acute{\kappa}\alpha\rho\eta\nu\alpha$ (Ψ 260), '... mighty head of cattle' etc. (cf. I 407).¹⁷ The other major meaning of $\acute{\kappa}\alpha\rho\eta\nu\alpha$ in Homer is 'peaks (of mountains); towers, citadels (of cities)'. That this is simply a metaphorical usage of 'heads' is plausible in any case, but becomes especially clear from a comparison of two phrases like:

A 44 etc. $\beta\eta \delta\epsilon \kappa\alpha\tau' \omicron\upsilon\lambda\acute{\upsilon}\mu\pi\omicron\iota\omicron \acute{\kappa}\alpha\rho\eta\nu\alpha \dots$
and Y 5 $\kappa\rho\alpha\tau\acute{o}s \acute{\alpha}\pi' \omicron\upsilon\lambda\acute{\upsilon}\mu\pi\omicron\iota\omicron \dots$

¹⁴ Even if it is assumed that these derivatives all got their $\acute{\kappa}\alpha\rho\alpha\eta\nu-$ or $\kappa\rho\tilde{\alpha}\eta\nu-$ from the underlying 'head' paradigm itself, this would still indicate that both outcomes were represented in that paradigm. For present purposes nothing further is required. We may note, however, that $\kappa\rho\tilde{\alpha}\eta\nu(-\acute{i}e/o)-$ ($> \kappa\rho\tilde{\alpha}\acute{\alpha}\iota\nu\omega$) cannot easily have a $\kappa\rho\tilde{\alpha}\eta\nu-$ from the $\hat{k}r\tilde{h}_2sn$ -paradigm.

¹⁵ As in all Gk. neuter nom.-accusatives, the accent has been retracted here.

¹⁶ See LSJ, *sv* $\acute{\kappa}\alpha\rho\eta\nu\omega\nu$.

¹⁷ This usage is seen transferred to humans as well (A 158, 500).

The interconnected hypotheses of a neuter n -stem in $\acute{\kappa}\alpha\rho\eta\nu\alpha$ and the limitation of the treatment $\acute{\kappa}\alpha\rho\alpha\eta\nu\text{-}$ (> $\acute{\kappa}\alpha\rho\eta\nu\text{-}$) to the plural are supported by the following:

a) In the *Iliad* and *Odyssey* there are no singular forms showing $\acute{\kappa}\alpha\rho\eta\nu\text{-}$. This is consistent with the view that the treatment $\acute{\kappa}\alpha\rho\alpha\eta\nu\text{-}$ of $\acute{k}\eta\text{-}h_2\text{-}sn\text{-}$ was in fact in order only in the plural. On the other hand, there are no Homeric forms unambiguously showing $\acute{\kappa}\alpha\rho\eta\nu\text{-}$ at all (neither singulars nor clearly thematic plurals like Hes. $\acute{\kappa}\alpha\rho\acute{\eta}\nu\omicron\iota\varsigma$). Without counting wholly repeated lines more than once, nom.-acc. $\acute{\kappa}\alpha\rho\eta\nu\alpha$ occurs 14 times in the *Iliad* and *Odyssey*, gen. $\acute{\kappa}\alpha\rho\acute{\eta}\nu\omega\nu$ 4 times. No singular form and no clearly thematic form occurs until the *Hymns*, where $\acute{\kappa}\alpha\rho\acute{\eta}\nu\omega\upsilon$, which is both, first appears (*HH* 8.12, *HH* 28.8). It remains rare thereafter. This pattern of attestation, observable for none of the other Homeric stems ($\acute{\kappa}\rho\alpha\alpha\tau\text{-}$, $\acute{\kappa}\alpha\rho\eta\alpha\tau\text{-}$, $\acute{\kappa}\rho\alpha\tau\text{-}$) that furnish plural forms meaning 'heads', suggests that $\acute{\kappa}\alpha\rho\acute{\eta}\nu\omega\nu$ is back-formed¹⁸ to $\acute{\kappa}\alpha\rho\eta\nu\alpha\text{-}\omega\nu$. If so, the *plurale tantum* status of $\acute{\kappa}\alpha\rho\eta\nu\alpha$ is most easily explained by interpreting it as the original plural of $\acute{\kappa}\alpha\rho\alpha$ that has been replaced by a newer paradigm based on other stems (several such as far as Homer is concerned).

b) If this is the correct historical view of $\acute{\kappa}\alpha\rho\eta\nu\alpha\text{-}\omega\nu$ it is an archaism—obsolete and preserved only by virtue of its presence in traditional material. This in turn would lead one to expect it to occur mainly in a severely restricted member of types of line-segments. With a single exception that proves the rule, the nom.-acc. $\acute{\kappa}\alpha\rho\eta\nu\alpha$ occurs in only two ways in the *Iliad*:

- 1) at the end of adonics. E.g.:
 I 407 || ξανθὰ $\acute{\kappa}\alpha\rho\eta\nu\alpha$ #
 Λ 158 || πίπτε $\acute{\kappa}\alpha\rho\eta\nu\alpha$ #
- 2) at the end of the $\bar{\text{I}}\dots$ # segment. E.g.:
 B 869 $\bar{\text{I}}$ αἰπεινὰ $\acute{\kappa}\alpha\rho\eta\nu\alpha$ #
 B 117 = I 24 $\bar{\text{I}}$ κατέλυσε $\acute{\kappa}\alpha\rho\eta\nu\alpha$ #

This distribution of nom.-acc. $\acute{\kappa}\alpha\rho\eta\nu\alpha$ is also observed in all six occurrences of the form in the *Odyssey* (all six are of the second type above) and in ten of the eleven in the *Hymns*.

The sole exception in the *Iliad* is itself instructive in a way:

Λ 500 # ἀνδρῶν πίπτε $\acute{\kappa}\alpha\rho\eta\nu\alpha$ $\bar{\text{I}}\dots$

¹⁸ So, e.g., Frisk *GEW* 1, 788. Cf. Egli *Heteroklisie*, 31 f.

where $\pi\acute{\iota}\pi\tau\epsilon \kappa\acute{\alpha}\rho\eta\nu\alpha$ also occurs as an adonic (Λ 158 above). In a case like this, it may be possible to argue indirectly (despite the fact that the actual phrase in question occurs once in each spot) that it is meaningful to speak of a "transposed" adonic. This might be said partly on the grounds of other cases of $\parallel - \cup \kappa\acute{\alpha}\rho\eta\nu\alpha \#$, but also with support from examples like:¹⁹

... ἦματα πάντα | ... 4x vs. ... || ἦματα πάντα # 26x
... αἰπὺς ὄλεθρος | ... 2x vs. ... || αἰπὺς ὄλεθρος # 23x

Such arguments cannot be pushed too far, but it seems fair to say that Λ 500 does not seriously interfere with the general statement that $\kappa\acute{\alpha}\rho\eta\nu\alpha$ occurs only under a limited number of circumstances.

The genitive $\kappa\alpha\rho\acute{\eta}\nu\omega\nu$ is of even more limited occurrence, although it appears so rarely over all that this is not necessarily very suggestive. There are three occurrences in the *Iliad* (one of them a line that is found four times²⁰). The position is always ... | $\kappa\alpha\rho\acute{\eta}\nu\omega\nu$ || ..., and in fact all occurrences are essentially identical in their four first feet:

βῆ { $\delta\epsilon$ / α } κατ' Οὐλύμποιο $\kappa\alpha\rho\acute{\eta}\nu\omega\nu$ || ...

The same is true of the single *Odyssey* occurrence (2x). This genitive does not appear in a different position until its only occurrence in the *Hymns* (*H. Dem.* 449): ... | κατ' Οὐλύμποιο $\kappa\alpha\rho\acute{\eta}\nu\omega\nu$ #. And even here it is still the same phrase. In short, $\kappa\alpha\rho\acute{\eta}\nu\omega\nu$ does not exist in Homer outside of a single phrase with essentially one position.

The plural paradigm $\kappa\acute{\alpha}\rho\eta\nu\alpha / \kappa\alpha\rho\acute{\eta}\nu\omega\nu$, therefore, seems limited and predictable enough in its Homeric usage to be consistent with viewing it as an archaism that has been retained along with the traditional material that contained it. With respect to its restricted status, it contrasts at least with the oblique forms made on $\kappa\rho\acute{\alpha}\tau-$ (see below).

c) Outside Homer, there is one additional small piece of evidence pointing to a $\kappa\acute{\alpha}\rho\alpha\eta\nu-$ (n -stem) 'head'. Although far from conclusive, it seems worth mentioning. This is the gloss $\xi\rho\omega\phi\omicron\varsigma$ 'goat, kid' included among the meanings of $\kappa\acute{\alpha}\rho\alpha\nu\nu\omicron\varsigma$ in Hesychius (§ 49.4). Such a form with this meaning cannot be connected directly with (back-formed)

¹⁹ For additional examples (and some showing the reverse proportions) with discussion of the question in general, see J. B. Hainsworth, *The Flexibility of the Homeric Formula*, 48 ff. and 137 ff. (Table VII).

²⁰ In addition, there is no essential difference between the 4x-repeated line and one of the other two (H 19).

κάρηνον, both because it cannot have been back-formed from a neuter plural and because it means the wrong thing. Nor is it at all likely to be yet another derivative meaning 'horned', because a stem $\hat{k}\epsilon\gamma h_2 sn\text{-}$ (> Gk. $\kappa\alpha\rho\alpha\eta\nu\text{-}$) as such with the meaning 'horn' rather than 'head' is found neither in Greek nor anywhere else. But if $\kappa\acute{\alpha}\rho\eta\nu\text{-}\alpha$ is in fact an n -stem plural, it could be supposed that $\kappa\acute{\alpha}\rho\alpha\eta\nu\text{-}\alpha$ in the meaning 'mountain peaks' has served as the basis for a derivative $\kappa\acute{\alpha}\rho\alpha\eta\nu\text{-}o\text{-}$ ('found etc.) on the peak(s)' which, with substantivization, has become a word for 'mountain goat'. It would then be a derivative comparable to $\tilde{\upsilon}\delta\omega\rho$ 'water': $\tilde{\upsilon}\delta\rho\text{-}o\text{-}\varsigma$ ('found etc.) in the water' > 'water-snake'.²¹

49.7.1 It would seem plausible then to conclude that the original plural of $\kappa\acute{\alpha}\rho\alpha$ (< $\hat{k}\epsilon\gamma\text{-}\acute{e}h_2$) was $\kappa\acute{\alpha}\rho\alpha\eta\nu\text{-}\alpha$ (< $\hat{k}\epsilon\gamma h_2 sn\text{-}h_2$) and that this very form is continued by *plurale tantum* $\kappa\acute{\alpha}\rho\eta\nu\alpha$. This still leaves the stems $\kappa\rho\acute{\alpha}\alpha\tau\text{-}$, $\kappa\alpha\rho\eta\alpha\tau\text{-}$, $\kappa\alpha\rho\eta\tau\text{-}$ and $\kappa\rho\acute{\alpha}\tau\text{-}$ (and their relationships—historical and otherwise—to one another) to be accounted for. The discussion of $\kappa\acute{\alpha}\rho\eta\nu\alpha$ leads us to take up the stem $\kappa\alpha\rho\eta\tau\text{-}$ first.

In the "synchronic grammar" of the epic dialect, in which the establishment of paradigms may be said to depend upon the metrical and positional characteristics of the members as much as it does upon their morphology, we would have no hesitation in establishing the following paradigms, where the members match each other in both metrical and morphological shape:

$\text{--}\tilde{\text{--}}$	$\left\{ \begin{array}{l} \text{sg.: } \kappa\rho\acute{\alpha}\tau\acute{o}\varsigma, \kappa\rho\acute{\alpha}\tau\acute{\iota} \\ \text{pl.: } \kappa\rho\acute{\alpha}\tau\omega\nu, \kappa\rho\acute{\alpha}\sigma\acute{\iota}(\nu) \end{array} \right.$	$\text{--}\cup\cup$	$\left\{ \begin{array}{l} \text{sg.: } \kappa\rho\acute{\alpha}\alpha\tau\omicron\varsigma, \kappa\rho\acute{\alpha}\alpha\tau\iota \\ \text{pl.: } \kappa\rho\acute{\alpha}\alpha\tau\alpha \end{array} \right.$
	$\cup\text{--}\cup\cup$		$\left\{ \begin{array}{l} \text{sg.: } \kappa\alpha\rho\acute{\eta}\alpha\tau\omicron\varsigma, \kappa\alpha\rho\acute{\eta}\alpha\tau\iota \\ \text{pl.: } \kappa\alpha\rho\acute{\eta}\alpha\tau\alpha \end{array} \right.$

²¹ $\kappa\acute{\alpha}\rho\alpha\nu\omicron\varsigma$ 'goat' is in turn reminiscent of another word given by Hesychius: $\kappa\alpha\rho\alpha\nu\acute{o}$ τὴν αἶγα. Κρητες. On the one hand, one could simply suppose that $\kappa\alpha\rho\alpha\nu\acute{o}$ is an endocentric feminine of the same $\kappa\alpha\rho\alpha\eta\nu\text{-}o\text{-}$ that could lie behind $\kappa\acute{\alpha}\rho\alpha\nu\omicron\varsigma$ 'goat'. In that case, one would see a Cretan $*\kappa\acute{\alpha}\rho\alpha\nu\omicron\varsigma$ 'goat' (= Aeol. $\kappa\acute{\alpha}\rho\alpha\nu\omicron\varsigma$) : $\kappa\alpha\rho\alpha\nu\acute{o}$ 'she-goat' parallel to $\acute{\alpha}\nu\theta\rho\omega\pi\omicron\varsigma$: $\acute{\alpha}\nu\theta\rho\omega\pi\acute{o}$ ('γυνή παρὰ Λάκωσιν—Hsch.).

Alternatively, $\kappa\alpha\rho\alpha\nu\acute{o}$ may itself be an exocentric derivative directly made from $\kappa\alpha\rho\alpha\eta\nu\text{-}$ 'peak' (cf. $\acute{\alpha}\lambda\phi\iota\tau\text{-}$: $\acute{\alpha}\lambda\phi\iota\tau\acute{o}$ 'old woman covered with flour, bogey-woman'). Formally, an exocentric $\acute{\omega}$ derivative from a thematic $\kappa\alpha\rho\alpha\eta\nu\text{-}o\text{-}$ would also be possible (cf. $\kappa\acute{\alpha}\mu\iota\nu\omicron\varsigma$ 'oven' : $\kappa\alpha\mu\acute{\iota}\nu\acute{o}$ 'oven-woman'), so that $\kappa\alpha\rho\alpha\nu\acute{o}$ could have been derived from a $\kappa\acute{\alpha}\rho\alpha\nu\alpha\text{-}/\text{-}\omega\nu$ 'peaks' that had been re-interpreted as an o -stem.

For a different interpretation, see Peters *Untersuchungen*, 243 note 195: $\hat{k}\epsilon\gamma h_2 s\text{-}(H)no\text{-}$ > $\kappa\epsilon\rho\acute{\alpha}no\text{-}$ > $\kappa\alpha\rho\acute{\alpha}no\text{-}$ > $\kappa\alpha\rho\alpha\nu\acute{o}$.

But if we were to collect the forms belonging to the $\cup - \sim$ "paradigm", the result would be "suppletive":

$$\begin{cases} \text{sg.: } \kappa\acute{\alpha}\rho\eta\tau\omicron\varsigma \text{ (later } \kappa\alpha\rho\acute{\eta}\nu\omicron\upsilon\text{)}, \kappa\acute{\alpha}\rho\eta\tau\iota \\ \text{pl.: } \kappa\acute{\alpha}\rho\eta\nu\alpha, \kappa\alpha\rho\acute{\eta}\nu\omega\nu \end{cases}$$

Yet there can be little doubt that this collection of forms, a hodge-podge from the morphological point of view, has every right to be considered an epic "paradigm" in the special sense attaching to that notion. The reason for this goes well beyond the bare fact that the forms share a metrical shape. It may be recalled (§ 49.6 b) that $\kappa\acute{\alpha}\rho\eta\nu\alpha$ is basically limited to the positions 1) $\parallel - \cup \kappa\acute{\alpha}\rho\eta\nu\alpha \#$ and 2) $\overset{7}{\mid} \sim - \cup \kappa\acute{\alpha}\rho\eta\nu\alpha \#$. This cannot be unrelated to the fact that the following instances of $\kappa\acute{\alpha}\rho\eta\tau\omicron\varsigma/\kappa\alpha\rho\acute{\eta}\nu\omicron\upsilon$ and $\kappa\acute{\alpha}\rho\eta\tau\iota$, a small inventory in any case, appear in precisely the same position and in one of these two types of segments:

$\text{O } 75 \dots \overset{7}{\mid} \acute{\epsilon}\pi\acute{\epsilon}\nu\epsilon\upsilon\sigma\alpha \kappa\acute{\alpha}\rho\eta\tau\iota \#$ and *H. Dem.* 466 $\dots \overset{7}{\mid} \acute{\epsilon}\pi\acute{\epsilon}\nu\epsilon\upsilon\sigma\epsilon \kappa\acute{\alpha}\rho\eta\tau\iota \#$

$\zeta 230 = \psi 157 \dots \parallel \kappa\grave{\alpha}\delta \delta\acute{\epsilon} \kappa\acute{\alpha}\rho\eta\tau\omicron\varsigma \#$
HH 8.12 $\overset{7}{\mid} \acute{\alpha}\pi' \acute{\epsilon}\mu\omicron\iota\omicron \kappa\alpha\rho\acute{\eta}\nu\omicron\upsilon \#$

There are no other occurrences of $\kappa\acute{\alpha}\rho\eta\tau\omicron\varsigma$ and $\kappa\acute{\alpha}\rho\eta\tau\iota$. For $\kappa\alpha\rho\acute{\eta}\nu\omicron\upsilon$, which never occurs in the epics themselves, there is only one other attestation (*HH* 28.8):

$\acute{\epsilon}\sigma\sigma\upsilon\mu\acute{\epsilon}\nu\omega\varsigma \acute{\omega}\rho\omicron\upsilon\sigma\epsilon\nu \overset{7}{\mid} \acute{\alpha}\pi' \acute{\alpha}\theta\alpha\nu\acute{\alpha}\tau\omicron\iota\omicron \kappa\alpha\rho\acute{\eta}\nu\omicron\upsilon \#$

This shows neither an adonic nor a $\overset{7}{\mid} \dots \#$ segment, but the parallelism of this to our one example of "out of place" $\kappa\alpha\rho\acute{\eta}\nu\omega\nu$ (§ 49.6 b) at *H. Dem.* 449 is unmistakable:

$\acute{\epsilon}\sigma\sigma\upsilon\mu\acute{\epsilon}\nu\omega\varsigma \delta' \eta\iota\zeta\epsilon \overset{7}{\mid} \kappa\alpha\tau' \text{O}\acute{\upsilon}\lambda\acute{\upsilon}\mu\pi\omicron\iota\omicron \kappa\alpha\rho\acute{\eta}\nu\omega\nu \#$

On the basis of these specific agreements in behavior, one could, as just suggested, view $\kappa\acute{\alpha}\rho\eta\tau\omicron\varsigma/\kappa\alpha\rho\acute{\eta}\nu\omicron\upsilon$ and $\kappa\acute{\alpha}\rho\eta\tau\iota$ as associated with $\kappa\acute{\alpha}\rho\eta\nu\alpha/-\omega\nu$ in a synchronic Homeric "paradigm".

49.7.2 As to the historical interpretation of this situation, $\kappa\alpha\rho\acute{\eta}\nu\omicron\upsilon$ has already been dealt with (§ 49.6 a). We may follow the traditional view that it is a back-formation made from the earlier-attested and always more frequent plural forms as if they were thematic. An investigation of the details of the positional characteristics of $\kappa\alpha\rho\acute{\eta}\nu\omicron\upsilon$ only confirms this view.

For $\acute{\kappa}\alpha\rho\eta\tau\omicron\varsigma$ and $\acute{\kappa}\alpha\rho\eta\tau\iota$, the essential facts are 1) that each is a hapax,²² 2) that the oblique stem $\acute{\kappa}\alpha\rho\eta\tau\text{-}$ as such is consequently singular only, and 3) that they differ not at all from the much more frequent $\acute{\kappa}\alpha\rho\eta\nu\alpha$ (as against $\acute{\kappa}\alpha\rho\eta\nu\omega\nu$) with respect to the kinds of segments in which they appear and their position within those segments. This leaves open two main possibilities.

a) $\acute{\kappa}\alpha\rho\eta\tau\text{-}$ is the epic version of an oblique to $\acute{\kappa}\alpha\rho\alpha$ that actually existed at one time in some "natural" Greek dialect. Under this heading could come a $\acute{\kappa}\alpha\rho\alpha\tau\text{-}$ with (Ionicized) metrical lengthening and a $\acute{\kappa}\alpha\rho\alpha(h)\alpha\tau\text{-}$ with both contraction (to $\acute{\kappa}\alpha\rho\alpha\tau\text{-}$) and Ionicization.²³ In the first case, the metrical lengthening of a hypothetical $\acute{\kappa}\alpha\rho\alpha\tau\text{-}$ might itself have been partly motivated by the (occasional) need for singular forms with the metrical shape of plural $\acute{\kappa}\alpha\rho\eta\nu\alpha$, and the association of singular $\acute{\kappa}\alpha\rho\eta\tau\text{-}$ with plural $\acute{\kappa}\alpha\rho\eta\nu\text{-}$ would then be self-explanatory. On the other hand, a $\acute{\kappa}\alpha\rho\alpha(h)\alpha\tau\text{-}$, unusable (without metrical lengthening) until it had contracted, would (after contraction) coincidentally present a metrical structure ($\cup - \sim$) comparable to $\acute{\kappa}\alpha\rho\eta\nu\text{-}$,²⁴ and this would be what led to its being used under the same conditions.²⁵

b) $\acute{\kappa}\alpha\rho\eta\tau\text{-}$ is entirely an artificial creation of the Homeric dialect that was produced precisely in order to fill the need for singular forms that scanned like $\acute{\kappa}\alpha\rho\eta\nu\alpha$, but not produced by rearranging a "genuine" $\acute{\kappa}\alpha\rho\alpha\tau\text{-}$ or $\acute{\kappa}\alpha\rho\alpha(h)\alpha\tau\text{-}$. In this case the exact process by which $\acute{\kappa}\alpha\rho\eta\tau\text{-}$ was formed remains to be discovered.

49.7.3 Neither of the hypotheses under a) above is very satisfactory. A $\acute{\kappa}\alpha\rho\alpha\tau\text{-}$ would have to reflect $\acute{k}h_2n\text{-}$ ($> \acute{\kappa}\alpha\rho\alpha\text{-}$ with eventual remodelling of the usual type in Greek to $\acute{\kappa}\alpha\rho\alpha\tau\text{-}$). But such a stem finds no support anywhere. It is $\acute{k}h_2sn\text{-}$ to which both the comparative evidence and the unambiguous Greek forms ($\acute{\kappa}\alpha\rho\alpha\acute{\iota}\nu\omega$, $\acute{\kappa}\alpha\rho\alpha\nu\nu\omicron\varsigma$, $\acute{\kappa}\alpha\rho\eta\nu\alpha$) point.

²² $\acute{\kappa}\alpha\rho\eta\tau\omicron\varsigma$ technically occurs in both ζ 230 and ψ 157, but the two lines are identical word for word.

²³ In similar fashion, Risch (*SMEA* 1, 61) suggested that Hom. $\acute{\kappa}\alpha\rho\eta\alpha\tau\text{-}$ represents a $*\acute{\kappa}\alpha\rho\alpha\alpha\tau\text{-}$ that has been not only adapted to the meter, but Ionicized ('im Vokal an $\acute{\kappa}\alpha\rho\eta$ angepaßt') as well. Cf. §§ 49.9.1 f. below.

²⁴ Before contraction, of course, it would not present such a structure. Nor at that point could it be made to present it.

²⁵ For reasons that will become clear from the discussion of the alternative Homeric oblique $\acute{\kappa}\alpha\rho\eta\alpha\tau\text{-}$ (§§ 49.9.1 f.), $\acute{\kappa}\alpha\rho\eta\tau\text{-}$ cannot be taken as contracted from $\acute{\kappa}\alpha\rho\eta\alpha\tau\text{-}$.

As for $\kappa\acute{\alpha}\rho\acute{\alpha}(h)\acute{\alpha}\tau-$, the only reasonable source for such an outcome would be $\hat{k}_Fh_2sn-/ \hat{k}_Fh_2sn-$ with an accented root and the treatment shown (§ 49.4) by $\kappa\acute{\alpha}\rho\acute{\alpha}\nu\omicron\varsigma$, $\kappa\acute{\alpha}\rho\acute{\alpha}\nu\omicron\varsigma$ and $\kappa\acute{\alpha}\rho\eta\nu\alpha$ itself, but with subsequent substitution of the $-ατ-$ stem $\kappa\acute{\alpha}\rho\acute{\alpha}\eta\alpha\tau-$ for the original n -stem $\kappa\acute{\alpha}\rho\acute{\alpha}h\nu-/ \kappa\acute{\alpha}\rho\acute{\alpha}h\alpha\nu-/ \kappa\acute{\alpha}\rho\acute{\alpha}h\alpha-$. This, in turn, would mean that $\kappa\acute{\alpha}\rho\acute{\alpha}\eta\alpha\tau-$ was originally a plural stem, since $\hat{k}_Fh_2sn- (> \kappa\acute{\alpha}\rho\acute{\alpha}h\nu-$ etc.) would be found in the first instance only there (§§ 49.3–5). But the only two forms ever found with the stem $\kappa\acute{\alpha}\rho\eta\tau-$ are both singulars. And this is not only a statistical point: a $\kappa\acute{\alpha}\rho\acute{\alpha}\eta\alpha\tau-$ remodelled from $\kappa\acute{\alpha}\rho\acute{\alpha}h\nu-$ or the like would have been the replacement of that very $\kappa\acute{\alpha}\rho\acute{\alpha}h\nu-$, and this makes it difficult to suppose that $\kappa\acute{\alpha}\rho\acute{\alpha}\eta\alpha\tau-$ got its start as a plural stem and was generalized to the singular in contracted form in a couple of instances. In that case, we certainly ought to find at least some plural forms of the shape $\cup - \tilde{\ }$ showing contracted $\kappa\acute{\alpha}\rho\eta\tau-$ (i.e. $*\kappa\acute{\alpha}\rho\eta\tau\alpha/ * \kappa\acute{\alpha}\rho\eta\tau\omega\nu$). Otherwise, it would be necessary to adopt the highly unlikely theory that $\kappa\acute{\alpha}\rho\acute{\alpha}\eta\alpha\tau-$, the new form of $\kappa\acute{\alpha}\rho\acute{\alpha}h\nu-$, became $\kappa\acute{\alpha}\rho\acute{\alpha}\tau-/ \kappa\acute{\alpha}\rho\eta\tau-$, the metrical equivalent of $\kappa\acute{\alpha}\rho\eta\nu-$, and then was able to serve as the basis for singular forms with the shape of the old *plurale tantum*, but never once was able to oust the very form in the epic dialect that it had ousted in some “natural” dialect. It would, of course, be impossible to say what “natural” dialect this was, because nowhere outside of Homer does $\kappa\acute{\alpha}\rho\acute{\alpha}/ \kappa\acute{\alpha}\rho\eta$ have any oblique $-(\alpha)\tau$ -stem but $\kappa\acute{\alpha}\rho\acute{\alpha}\tau-$. In addition, there is the small problem of the accent in a $\kappa\acute{\alpha}\rho\eta\tau- < \kappa\acute{\alpha}\rho\acute{\alpha}\tau-$ (below), and the much messier problem of the timbre of the supposed contraction vowel. It is scarcely enough to say simply that it is “Ionicized”²⁶—especially in view of unmolested $\kappa\acute{\alpha}\rho\acute{\alpha}\tau-$ and $\kappa\acute{\alpha}\rho\acute{\alpha}\tau-$ (on $\kappa\acute{\alpha}\rho\eta\alpha\tau-$ see below).

49.7.4 In contrast, there is no difficulty whatever if $\kappa\acute{\alpha}\rho\eta\tau\omicron\varsigma$ and $\kappa\acute{\alpha}\rho\eta\tau\iota$ are viewed as artificially created for the express purpose of supplying $\kappa\acute{\alpha}\rho\eta\nu\alpha$ and $\kappa\acute{\alpha}\rho\eta\nu\omega\nu$ with metrically equivalent singular forms. The agreement of these singulars with these plurals with regard to position and segment-type would be practically a matter of definition then. So would the limitation of $\kappa\acute{\alpha}\rho\eta\tau-$ to the singular. Such a view would also provide an immediate explanation for the extreme rarity of this stem and for its complete disappearance (or rather absence) from post-

²⁶ On the “Ionicization” of putatively pre-Ionic epic forms in $\acute{\alpha}$ to η cf. in any case Meister *HK*, 168 ff.—esp. 171, Chantraine *Gramm.*, 17 ff., note 23 just above. See also note 6 to IIb.

Homeric Greek. These last two advantages are not offered by the alternatives just discussed.

As to the actual form taken by this artificial formation, there is in any case little choice but to describe $\kappa\alpha\rho\acute{\eta}\nu\omicron\upsilon$ (*Hymns* only) as the successor to $\acute{\kappa}\alpha\rho\eta\tau\omicron\varsigma$ (*Od.* only—cf. $\acute{\kappa}\alpha\rho\eta\tau\iota$ *Il.* only) as the special epic gen. sg. associated with plural $\acute{\kappa}\alpha\rho\eta\nu\alpha$ / $-\omega\nu$. In other words, it seems that there eventually came a time at which $\kappa\alpha\rho\acute{\eta}\nu\omicron\upsilon$: $\kappa\alpha\rho\acute{\eta}\nu\omega\nu$ was better motivated than the earlier $\acute{\kappa}\alpha\rho\eta\tau\omicron\varsigma$: $\kappa\alpha\rho\acute{\eta}\nu\omega\nu$, but this was apparently not yet so at the relatively early stage represented by the *Il.* and *Od.* themselves. In short, the seemingly trivial and, one might think, almost inevitable process $-\alpha$ / $-\omega\nu \rightarrow -\omicron\upsilon$ was clearly no more attractive (early on) than the alternative that was chosen instead. This is consistent with what was said earlier, where it was suggested that there is reflected in the epic tradition a stage at which $\acute{\kappa}\alpha\rho\alpha\eta\nu\alpha$ (or its outcome) was an obsolete²⁷ but recognizable plural of $\acute{\kappa}\alpha\rho\eta$ itself (§ 49.6), and had been retained in Homeric language mainly because it served a purpose—namely that of providing nom.-acc. and genitive plural forms in the $\cup - \breve{\text{z}}$ “paradigm” (§ 49.7.1) of $\acute{\kappa}\alpha\rho\tilde{\alpha}$ / $\acute{\kappa}\alpha\rho\eta$.

But if there was a paradigmatic relationship, at least for the relatively early users of the epic dialect,²⁸ between $\acute{\kappa}\alpha\rho\tilde{\alpha}$ / $\acute{\kappa}\alpha\rho\eta$ singular and $\acute{\kappa}\alpha\rho\tilde{\alpha}\nu\alpha$ / $\acute{\kappa}\alpha\rho\alpha\nu\nu\alpha$ / $\acute{\kappa}\alpha\rho\eta\nu\alpha$ plural, and there arose the technical problem of introducing an oblique singular form into the kind(s) of expressions developed by the tradition around this nom.-acc. plural, there is every chance that this could have been done by morphologically basing the new singular with the structure $\cup - \breve{\text{z}}$ on $\acute{\kappa}\alpha\rho\tilde{\alpha}$ / $\acute{\kappa}\alpha\rho\eta$ itself. This was, after all, the very nom.-acc. sg. with which the special epic gen. and dat. sg. were meant to be identified.

For the creation of an oblique modelled on $\acute{\kappa}\alpha\rho\tilde{\alpha}$ (neuter), the obvious model is the large class of neuters in $-\tilde{\alpha}$: the $-\mu\alpha$ / $-\mu\alpha\tau$ -formations that included a fair number of body-part terms (e.g. $\alpha\acute{\iota}\mu\alpha$ ‘blood’, $\delta\acute{\epsilon}\rho\mu\alpha$ ‘skin’, $\delta\acute{\omicron}\mu\mu\alpha$ ‘eye’, $\sigma\acute{\tau}\omicron\mu\alpha$ ‘mouth’, and $\sigma\tilde{\omega}\mu\alpha$ ‘body’ itself). The pair $(\sigma\acute{\tau}\omicron\mu\text{-})\alpha$: $(\sigma\acute{\tau}\omicron\mu\text{-})\alpha\tau\omicron\varsigma$ would lead directly to $(\acute{\kappa}\alpha\rho\text{-})\tilde{\alpha}$ / η : $(\acute{\kappa}\alpha\rho\text{-})\tilde{\alpha}$ / $\eta\tau\omicron\varsigma$. The accent of $\acute{\kappa}\alpha\rho\eta\tau\omicron\varsigma$ / $-\iota$ is in this way the inevitable result of the analogical process, since all neuters with oblique $-(\mu)\alpha\tau$ -have recessive accent. The $-\eta$ - is also self-explanatory, for whether $\kappa\alpha\rho\eta\tau\text{-}$ was first formed by Ionic or non-Ionic poets, the oblique would

²⁷ i.e. replaced by $\kappa\rho\acute{\alpha}\alpha\tau\alpha$ and then $\kappa\rho\tilde{\alpha}\tau\alpha$ (§ 49.8).

²⁸ Although perhaps not necessarily for those very same people as speakers of their own contemporaneous “natural” dialect.

only make morphological sense if it repeated the vowel of the nom.-acc.²⁹

On the other side, we might wonder what factors led to the choice of this expedient rather than the simpler-seeming $\kappa\acute{\alpha}\rho\eta\nu\alpha / -\omega\nu \rightarrow \kappa\alpha\rho\eta\nu\omicron\nu / *- \varphi$. One possibility is that at a relatively early date, there was still some reality to a plural paradigm that reflected (the outcome of) $\kappa\acute{\alpha}\rho\alpha\eta\nu\alpha - \kappa\alpha\rho\acute{\alpha}\eta\nu\omega\nu - \kappa\rho\acute{\alpha}\eta\acute{\alpha}\sigma\iota - \kappa\rho\acute{\alpha}\eta\acute{\alpha}\varphi\iota$, and this inhibited its identification with the type $-\alpha / -\omega\nu / -\omicron\iota\sigma\iota / -\omicron\iota\varsigma$, a pre-requisite to the back-formation of $-\omicron\upsilon / -\varphi$ in the singular. Similarly, $\kappa\acute{\alpha}\rho\alpha\eta\nu\alpha : \kappa\acute{\alpha}\rho\acute{\alpha}$ (for as long a time as this had the status of a relationship within a paradigm) would not invite comparison with $-\alpha : -\omicron\upsilon$, a different (but also sufficient) pre-requisite for the development in question. [*]

It is impossible to be certain about this, but it stands to reason that the thematic interpretation of $\kappa\acute{\alpha}\rho\eta\nu\alpha / -\omega\nu$ would have become more and more likely as time went on. At a later stage, there would be poets for whom $\kappa\rho\acute{\alpha}(h)\acute{\alpha}\sigma\iota$ (> $\kappa\rho\acute{\alpha}\sigma\iota$) had been completely referred to the paradigm $\kappa\acute{\alpha}\rho\eta / \kappa\rho\acute{\alpha}\tau\omicron\varsigma$ (see below), and for whom $\kappa\acute{\alpha}\rho\eta\nu\alpha / -\omega\nu$ were isolated epic forms constituting a defective, separate lexical item—a kind of synonym of $\kappa\rho\acute{\alpha}\tau\alpha / \kappa\rho\acute{\alpha}\tau\omega\nu$, but one that lacked correspondents of $\kappa\rho\acute{\alpha}\tau\omicron\varsigma$, $\kappa\rho\acute{\alpha}\tau\iota$ etc. For such poets, $\kappa\alpha\rho\eta\nu\alpha / -\omega\nu : \kappa\alpha\rho\eta\nu\omicron\nu$ was in fact a better-motivated set. [**]

49.8 The result of these considerations is that the Homeric stem $\kappa\alpha\rho\eta\tau-$ can tell us nothing about the actual development of the inherited oblique stem $\hat{k}_T h_2 sn-$ after it had become Greek sg. $\kappa\rho\acute{\alpha}\eta\nu- \acute{\omicron}\varsigma / -(\acute{\epsilon}) \iota$: pl. $\kappa\acute{\alpha}\rho\alpha\eta\nu-\alpha / -\omega\nu$, $\kappa\rho\acute{\alpha}\eta\alpha-\sigma\iota / -\varphi\iota$. It goes without saying, of course, that this formation (like all Greek neuters with n -stem oblique) became an $-\alpha\tau$ -stem. The exact channel for this development need not concern us here. The interesting thing is that, unlike other paradigms, this one seems to have included two different shapes of the original n -stem: $\kappa\rho\acute{\alpha}\eta\nu-$ and $\kappa\alpha\rho\alpha\eta\nu-$. There may thus have been the opportunity for the creation of both a $\kappa\rho\acute{\alpha}\eta\alpha\tau-$ and a $\kappa\alpha\rho\alpha\eta\alpha\tau-$.

²⁹ More precisely, $\kappa\alpha\rho\eta\tau-$ itself was of course not created by non-Ionic poets. What is meant is that a pre-Ionic epic $\kappa\acute{\alpha}\rho\acute{\alpha} / \kappa\acute{\alpha}\rho\acute{\alpha}\tau-$ (analogically based on the $-(\mu)\alpha / -(\mu) \alpha\tau$ -neuters), if inherited by Ionic poets, could have had its nom.-acc. replaced by Ionic $\kappa\acute{\alpha}\rho\eta$ —and that the continued or repeated application of the $-(\mu)\alpha / -(\mu) \alpha\tau$ -model would lead to the replacement of epic oblique $\kappa\acute{\alpha}\rho\acute{\alpha}\tau-$ by $\kappa\acute{\alpha}\rho\eta\tau-$. If $\kappa\acute{\alpha}\rho\eta\tau-$ was first formed by Ionic poets, the model was the same, and its $-\eta-$ is still a direct consequence of the manner in which it was formed. I now see that this analogical model was invoked to explain $\kappa\acute{\alpha}\rho\eta\tau-$ by Meister *HK*, 194.

There is some question of whether the second of these possibilities ever really materialized (§ 49.7.2–.3; § 49.9). The first of them did. Just as Skt. oblique *ūdh-n-* 'udder', *yak-n-* 'liver' etc. correspond to Gk. οὔθ-ατ-, ἥπ-ατ- etc., *śīṛṣ-ṇ-* would correspond to κῤῥᾱ-ατ- and this is the form to be recognized in Homeric κῤῥᾱτ-ος, -ι, -α. This stem, with -ᾱα- uncontracted, in a hiatus dating from the loss of intervocalic -h-, would seem to be an archaism even if it is allowed that there is a morpheme boundary there.³⁰ The circumstances under which κῤῥᾱτ- appears are consistent with this. There are only two forms with this stem in the *Iliad*, and one in the *Odyssey*:

Ξ 177 ...	ἔκ κῤῥᾱτος ...
T 93	... κῤῥᾱτα βαίνει
χ 218	... κῤῥᾱτι τίσεις

With contraction, κῤῥᾱτ- became κῤῥᾱτ- (outside of Ionic³¹), and it is this oblique stem that is most frequent and least restricted in Homer. κῤῥᾱτός, κῤῥᾱτί, κῤῥᾱτα, κῤῥᾱτων and κῤῥᾱσίν are all found, occupying three different positions in the *Iliad* and the same three plus two more in the *Odyssey*. These forms may be considered the "normal" ones, but at the same time there is reason to suppose that they have belonged to the epic dialect for quite some time. In the first place they play a role in some repeated structures (e.g. # κῤῥᾱτὸς ἀπ' – ∞ – ∪ ῥ). Phonologically, they would seem to be Aeolisms which the Ionic tradition preserved without "normalization".³²

³⁰ The morpheme boundary in κῤῥᾱ + ατ-, however, would presumably not have been an especially sturdy one in view of nom.-acc. κᾶρᾱ.

³¹ κῤῥᾱτ- could be the phonologically regular outcome of κῤῥᾱ(h)ατ- even in Attic if one chooses to depart either from the traditional relative chronology of Att-Ion $\bar{a} > \bar{a}$ fronting and $a(h)a > \bar{a}$ contraction or else from the traditional view of Attic reversion' (cf. note 6 to IIb). But even if the oblique κῤῥᾱτ- of the tragedians is a genuine Attic form (and not simply an epic borrowing), one might think of supposing that an eventual Attic paradigm κᾶρᾱ / *κῤῥᾱτ- (immediately after reversion of the traditional kind) was partially regularized to κᾶρᾱ / κῤῥᾱτ-. But nothing in particular positively points in this direction.

³² In Ionic, κῤῥᾱτ- should have developed to κῤῥᾱτ- > κῤῥᾱτ- / κῤῥᾱτ-. But there is no secure evidence for this Ionic oblique. Zenodotus reportedly read κῤῥᾱτός (schol. to A 530), but this is not likely to represent anything genuine—especially since no such reading is mentioned for any other of the 15 occurrences of gen. κῤῥᾱτός in the *Il* and *Od*, nor for any of the 10 *Il*/*Od* occurrences of dat. κῤῥᾱτί at all. If this is put together with the absence of κῤῥᾱτ- from post-Homeric Ionic as well, and the occurrence of dat. κᾶρᾱ already in Theognis (1024 *IEG*), it could mean that κᾶρᾱ was either defective or an η-stem fairly early on in Ionic. This would help explain the retention of κῤῥᾱτ- and

49.9.1 As already indicated, the plural allomorph $\acute{\kappa}\alpha\rho\alpha\eta\nu-$ of this stem, the one underlying $\acute{\kappa}\alpha\rho\eta\nu\alpha$, could in theory have led to a $\acute{\kappa}\alpha\rho\alpha\eta\alpha\tau-$. It has also been suggested (§ 49.7.3) that an alternate oblique of this shape need not be assumed in order to arrive at an explanation of Homeric $\acute{\kappa}\alpha\rho\eta\tau-$. For the last Homeric oblique, namely $\acute{\kappa}\alpha\rho\eta\alpha\tau-$, a hypothetical $\acute{\kappa}\alpha\rho\alpha\eta\alpha\tau-$ is also superfluous:

a) Forms showing this stem are reasonably well represented. Although there are none in the *Odyssey*, the *Iliad* has five examples, and there are two additional ones in the Hymns. One factor that begins to clarify the status of $\acute{\kappa}\alpha\rho\eta\alpha\tau-$ is that all such forms (with the shape $\cup - \cup \cup$) provide a unit ending in a dactyl between the trochaic caesura and the bucolic diaeresis:

$\acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\alpha}\tau\omicron\varsigma \parallel \Psi 44$; $\acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\alpha}\tau\iota \parallel T 405, X 205, H. Dem. 169$; *H.* 34.16; $\acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\alpha}\tau\alpha \parallel P 437$

b) Furthermore, five of the six $\acute{\kappa}\alpha\rho\eta\alpha\tau-$ forms occur in phrases that are extremely close to one another semantically, and are syntactically parallel as well. This is immediately clear for $\acute{\alpha}\nu\acute{\epsilon}\nu\epsilon\nu\epsilon \acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\alpha}\tau\iota \parallel$ (X 205) together with $\acute{\epsilon}\pi\acute{\epsilon}\nu\epsilon\nu\sigma\epsilon \acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\alpha}\tau\iota \parallel$ (*H. Dem.* 169 and *H.* 34.16³⁴). But $\acute{\eta}\mu\upsilon\sigma\epsilon \acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\alpha}\tau\iota \parallel$ (T 405) is not very different, and even $\acute{\epsilon}\nu\iota\sigma\acute{\kappa}\iota\mu\psi\alpha\nu\tau\epsilon \acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\alpha}\tau\alpha \parallel$ (P 437) conveys essentially the same idea.

c) From a different point of view, one could go on to compare

$\{ X 205 \acute{\alpha}\nu\acute{\epsilon}\nu\epsilon\nu\epsilon \acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\alpha}\tau\iota \parallel$
 $\{ H. Dem./H. 34 \acute{\epsilon}\pi\acute{\epsilon}\nu\epsilon\nu\sigma\epsilon \acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\alpha}\tau\iota \parallel$

with (§ 49.7.1) $\{ O 75 \acute{\epsilon}\pi\acute{\epsilon}\nu\epsilon\nu\sigma\alpha \acute{\kappa}\alpha\rho\eta\tau\iota \#$
 $\{ H. Dem. 466 \acute{\epsilon}\pi\acute{\epsilon}\nu\epsilon\nu\sigma\epsilon \acute{\kappa}\alpha\rho\eta\tau\iota \#$

This would suggest seeing a single expression here that makes use of two different obliques in order to be "mobile" between two positions.

d) At the same time it is to be noted that beside

(T 405) $\acute{\eta}\mu\upsilon\sigma\epsilon \acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\alpha}\tau\iota \parallel$ we find

(Θ 308) $\acute{\eta}\mu\upsilon\sigma\epsilon \acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\iota}$

And this, in turn, brings up the fact that $\acute{\iota}\cup - \acute{\iota}$ is precisely the position in which nom.-acc. $\acute{\kappa}\alpha\rho\eta$ almost always occurs (especially in the *Iliad*³⁵). Sometimes the remainder of the line containing $\acute{\kappa}\alpha\rho\eta$ is of

³⁴ These two lines are structurally parallel, but not identical.

³⁵ To this placement of $\acute{\kappa}\alpha\rho\eta$ there are only two exceptions (K 271 and P 200 = 442) in over two dozen occurrences (counting all instances of $\acute{\iota}\acute{\kappa}\alpha\rho\eta\acute{\iota} \acute{\kappa}\omicron\mu\acute{\omicron}\omega\nu\tau\text{-}\acute{\alpha}\varsigma/\text{-}\acute{\epsilon}\varsigma$ as one).

the structure $\overset{7}{|} \overset{\sim}{-} \cup \cup - \overset{\sim}{-} \#$. Just about as often,³⁶ however, it is $\overset{7}{|} \cup \cup || - \cup \cup - \overset{\sim}{-} \#$.

49.9.2 Combining these four observations, we might venture the hypothesis that $\overset{\sim}{-} \cup \overset{7}{|} \kappa\alpha\rho\eta\alpha\tau \cup ||$ is a positional alternative for a certain kind of expression (c) that was created around the traditional habits already associated with the much more frequent nom.-acc. $\kappa\alpha\rho\eta$ (d), and more specifically created by taking advantage of the frequent type $\overset{7}{|} \kappa\alpha\rho\eta \overset{7}{|} \cup \cup ||$ (d). For this reason, the $\kappa\alpha\rho\eta\alpha\tau$ -forms, with one exception, occur in only one kind of expression (b). This view of the status of $\kappa\alpha\rho\eta\alpha\tau$ - would lead one at least to suspect that this stem could be an epic creation rather than a re-arrangement of a "genuine" $\kappa\alpha\rho\alpha\alpha\tau$. An additional but separate consideration points in the same direction. There are a number of forms with the metrical structure and position $\overset{7}{|} \cup - \cup \cup ||$ that do in fact appear to be artificial epic creations, formed within the Homeric dialect for the express purpose of filling the very slot ($\overset{7}{|} \cup - \cup \cup ||$) in question. They, like $\kappa\alpha\rho\eta\alpha\tau$ - (a), are found there, but nowhere else.

Such cases are quite numerous. To mention only a couple that are rather closely related (semantically) to the $\kappa\alpha\rho\eta\alpha\tau$ - situation, $\mu\acute{\epsilon}\tau\omega\pi\omicron\nu$, the normal form of the word for 'forehead' in Homer ($\mu\acute{\epsilon}\tau\omega\pi\omicron\nu$, $\mu\epsilon\tau\acute{\omega}\pi\omega$, $\mu\acute{\epsilon}\tau\omega\pi\alpha$) and thereafter, has about eleven independent occurrences in the *Il.* and *Od.* Twice, however, is found the otherwise unknown by-form $\mu\epsilon\tau\acute{\omega}\pi\iota\omicron\nu$:

Λ 95 ... $\overset{7}{|} \mu\epsilon\tau\acute{\omega}\pi\iota\omicron\nu || \delta\acute{\xi}\epsilon\acute{\iota} \delta\omicron\upsilon\rho\acute{\iota}$

Π 739 ... $\overset{7}{|} \mu\epsilon\tau\acute{\omega}\pi\iota\omicron\nu || \delta\acute{\xi}\epsilon\acute{\iota} \lambda\acute{\alpha}\tilde{\iota}$

Descriptively, this is an artificial coinage intended to be used in the $\overset{7}{|} \cup - \cup \cup ||$ slot, and it is not found elsewhere. In this particular case, the genesis of the form becomes perfectly clear as soon as one compares these lines with E 73: ... $\kappa\alpha\tau\grave{\alpha} \iota\nu\acute{\iota}\omicron\nu || \delta\acute{\xi}\epsilon\acute{\iota} \delta\omicron\upsilon\rho\acute{\iota} \#$. There can be little doubt that $\iota\nu\acute{\iota}\omicron\nu ||$ 'occipital bone', which is not itself an artificial formation at all, supplied a morphological model for $\mu\epsilon\tau\acute{\omega}\pi\iota\omicron\nu ||$, a form of $\mu\acute{\epsilon}\tau\omega\pi\omicron\nu$ that could supply the desired dactyl at the diaeresis.

Similarly, $\pi\rho\acute{\omicron}\sigma\omega\pi\omicron\nu / \pi\rho\acute{\omicron}\sigma\omega\pi\alpha$ 'face' once (H 212) has a dat. pl. $\pi\rho\omicron\sigma\acute{\omega}\pi\alpha\sigma\iota ||$ and once (σ 192) an acc. pl. $\pi\rho\omicron\sigma\acute{\omega}\pi\alpha\tau\alpha ||$. This time, the epic analogical process can be stated somewhat more rigorously as $\gamma\omicron\upsilon\nu\alpha : \gamma\omicron\upsilon\nu\alpha\tau\alpha : \gamma\omicron\upsilon\nu\alpha\sigma\iota = \pi\rho\acute{\omicron}\sigma\omega\pi\alpha : X (\pi\rho\omicron\sigma\acute{\omega}\pi\alpha\tau\alpha) : Y (\pi\rho\omicron\sigma-$

³⁶ Once again, all instances of $\overset{7}{|} \kappa\alpha\rho\eta \overset{7}{|} \kappa\omicron\mu\acute{\omicron}\omega\nu\tau$ - have been counted as a single one.

ώπασι). But there is also a metrical dimension to the development: we find γούνατα || in eight of the ten occurrences of this nom.-acc. and γούνασιν || three times out of four.³⁷

It is not difficult to see the parallelism between $\acute{\iota}\kappa\alpha\rho\eta\acute{\alpha}\tau\acute{\iota}$ || etc. and cases like $\acute{\iota}\mu\epsilon\tau\acute{\omega}\pi\acute{\iota}\omicron\nu$ ||, $\acute{\iota}\pi\rho\omicron\sigma\acute{\omega}\pi\acute{\alpha}\tau\acute{\alpha}$ ||, $\acute{\iota}\pi\rho\omicron\sigma\acute{\omega}\pi\acute{\alpha}\sigma\acute{\iota}$ ||. Since there are no paradigms of the type nom.-acc. - \check{V} /oblique - \check{V} -ατ-, we cannot write an analogical proportion that would produce καρηατ- in a strictly morphological way.³⁸ But neither is it possible for μετώπιον–

? : $\acute{\iota}\nu\acute{\iota}\omicron\nu$ = μετώπιον : μετώπιον

The creation of oblique καρηατ- would have to be visualized as something like:

$\gamma\omicron\upsilon\nu\alpha\tau\alpha$ || (cf. → $\pi\rho\omicron\sigma\acute{\omega}\pi\alpha\tau\alpha$ ||)
 \swarrow
 $\acute{\iota}\kappa\alpha\rho\eta\acute{\alpha}\tau\acute{\iota}$ ||
 \nwarrow
 (§ 49.9.1 d above) $\acute{\iota}\kappa\alpha\rho\eta$ ∪ ∪ ||

Finally, there is a single occurrence of elided καρήαθ' (Λ 309). As such, its metrical shape guarantees that it will not behave in the same fashion as καρήατ-ος / -ι / -α. At best, there might be some expectation that elided καρήαθ' would take its cue from κάρηνα / κάρητι (∪ – ∪), but this too is ruled out by definition as soon as it is recalled that κάρηνα / κάρητι (§ 49.7) are found only at line-end. The line in which καρήαθ' occurs, moreover, is completely non-formulaic as far as one can tell (at least insofar as its three main segments have no parallels individually – much less as a group with the syntax of Λ 309³⁹). In view of the correspondences among the καρήατ ∪ forms in position (a, d above) and syntax/semantics of the actual phrases in which they appear (b, c), this single isolated καρήαθ' will not seriously interfere with the interpretation of the oblique καρηατ- suggested above.⁴⁰

³⁷ But γούνασι || only 2/11!

³⁸ The closest potential model would be something like γόνυ : γόνυF-ατ-. But it is far from exact, and would place the creation of καρήατ- at a fairly remote stage.

³⁹ ὥς ἄρα πυκνὰ καρήαθ' | ὕψ' Ἑκτορι || δάμνατο λαῶν (Λ 309). Only the middle segment recurs as such – and only twice. The adonic is completely unique: neither is there another case of || (vēřb) λαῶν #, nor of || δάμνα ∪ – – # (especially not with the subject of the verb occurring all the way back in the first segment).

⁴⁰ As a *vl* for ... καρήαθ' ὕψ' ... is found ... κάρηνα ὕψ' ..., which is not to be accepted as such, both because of the hiatus that would result and because this placement would be unparalleled for κάρηνα. But putting the transmitted καρήαθ' and κάρηνα together, we might consider the possibility of an idiosyncratic καρήναθ' – i.e. a καρή-νατα that would be to κάρηνα as προσώπατα to πρόσωπα or γούνατα to γούνα.

49.10 Different in kind from the *n*-, *t*- and *at*-stem obliques is the peculiar neut. nom. plural that appears at *H. Dem.* 12:

τοῦ καὶ ἀπὸ ῥιζῆς ὅ | ἑκατὸν κάρῃ || ἐξεπεφύκει

The form is unique except for an apparent voc. pl. κάρῃ in Sannyrion (*frag.* 3 Kock-trimeter), a parallel of dubious value since the passage (as short as it is) is clearly a parody of tragic and/or epic diction. On this basis, in any case, it has been assumed that the underlying shape of the form is κάρῃ (rather than κάρῃ with hiatus at the bucolic diaeresis in the *H. Dem.* passage), and it has even been suggested⁴¹ that the form represents κάρῃα-α (: *κάρῃα < $\hat{k}_I h_2-s$), in effect a Greek correspondent to I-Ir. $\hat{k}_I h_2-os$. One form in a Homeric Hymn plus one probable imitation of such a form is not really enough to support this view, however, and others have therefore tended to see κάρῃ in *H. Dem.* 12 as a peculiar nonce formation, pointing especially to the inexact but perhaps sufficient similarity between *H. Dem.* 12 and Δ 109:⁴²

τοῦ κέρῃ ἐκ κεφαλῆς ὅ | ἑκκαίδεκάδωρα πεφύκει

The creation of κέρῃ would then be especially closely related to the appearance of κέρῃ in a passage of similar content, and one could even produce a sort of inexact analogical κερῃτ- (Attic!) : κέρῃ = κερῃτ- : κάρῃ, noting in addition that in late epic, Hom. (etc.) κερῃτ- beside Hom. κερῃατ- seems to have supplied the model for a "distracted" κερῃατ- (Nic., Arat., Q.S.) beside κερῃτ-. The creation of κάρῃ would then result from an earlier interaction between the same two words, and in the opposite direction. But there is essentially nothing certain here.⁴³

49.11 In summary, then, the situation in Homer is that κάρῃ has two artificial obliques, both of which (κερῃτ-, κερῃατ-) repeat the -η vocalism of the Ionic nom.-acc. The expectable ατ-stem remodelling (κρῃατ-) of the expectable original oblique stem in the singular (κρῃατ-) appears in both uncontracted (κρῃατ-) and contracted (κρῃατ-) form, but only in a non-Ionic phonological shape. In addition, this remodelled oblique, theoretically at home only in the singular in the first instance, has already been made the basis of plural forms as well (κρῃατα, κρῃατων). On the other hand, the original shape of the

⁴¹ Cf. Schwyzler *GG* 1, 583.

⁴² See Richardson *HHDem*, *ad loc.*

⁴³ Cf. also IIb, note 6 and IIIc, note 10.

stem that originally was found only in the nom.-acc. (and gen.?) plural (namely $\acute{\kappa}\acute{\alpha}\rho\acute{\alpha}\eta\nu\text{-}$) is still reflected there too ($\acute{\kappa}\acute{\alpha}\rho\eta\nu\text{-}$). Finally, nothing indicates that $\acute{\kappa}\acute{\alpha}\rho\acute{\alpha}\eta\nu\text{-}$ (pl.) ever underwent remodelling to $*\acute{\kappa}\acute{\alpha}\rho\acute{\alpha}\eta\alpha\tau\text{-}$. As far as the "genuine" forms are concerned, the following is the picture recoverable from Homer:

sg. $\acute{\kappa}\acute{\alpha}\rho\acute{\alpha}$	pl. $\acute{\kappa}\acute{\alpha}\rho\acute{\alpha}\eta\nu\text{-}\alpha / \acute{\kappa}\rho\acute{\alpha}\eta\alpha\tau\text{-}\alpha$
$\acute{\kappa}\rho\acute{\alpha}\eta\alpha\tau\text{-}\omicron\varsigma$	$\acute{\kappa}\acute{\alpha}\rho\acute{\alpha}\eta\nu\text{-}\omega\nu / \acute{\kappa}\rho\acute{\alpha}\eta\acute{\alpha}\tau\text{-}\omega\nu$
$\acute{\kappa}\rho\acute{\alpha}\eta\alpha\tau\text{-}(\epsilon)\iota$	

As for the dat. and inst. plural, Homeric $\acute{\kappa}\rho\acute{\alpha}\sigma\acute{\iota}\nu$ (*Il.*) is entirely ambiguous. It could either continue the absolutely original $\acute{k}\acute{r}\acute{h}_2\text{-}s\acute{\eta}\text{-}\acute{s}\acute{\iota}$ ($> \acute{\kappa}\rho\acute{\alpha}\eta\acute{\alpha}\eta\iota \rightarrow \acute{\kappa}\rho\acute{\alpha}\eta\acute{\alpha}\sigma\acute{\iota} > \acute{\kappa}\rho\acute{\alpha}\sigma\acute{\iota}$) that would have belonged with $\acute{k}\acute{r}\acute{h}_2\text{-}s\acute{\eta}\text{-}h_2$ ($> \acute{\kappa}\acute{\alpha}\rho\eta\nu\alpha$), or it could be the normal and predictable dative made for $\acute{\kappa}\rho\acute{\alpha}\eta\alpha\tau\alpha$ or $\acute{\kappa}\rho\acute{\alpha}\tau\alpha$. The distinction becomes unrealistic in any case as soon as $\acute{\kappa}\rho\acute{\alpha}\eta\alpha\tau\text{-}$ is created. Nothing whatever can be concluded from $\acute{\kappa}\rho\acute{\alpha}\tau\epsilon\sigma\phi\iota$ (K 156) except that it belongs with $\acute{\kappa}\rho\acute{\alpha}\tau\alpha$ synchronically and was presumably made on the model $\acute{\omicron}\rho\epsilon\sigma\sigma\iota : \acute{\omicron}\rho\epsilon\sigma\phi\iota = \acute{\kappa}\rho\acute{\alpha}\tau\epsilon\sigma\sigma\iota : X$,⁴⁴ although it may be noted that $\acute{\kappa}\rho\acute{\alpha}\tau\epsilon\sigma\sigma\iota$ is not itself found and, what is more, $\text{-}\epsilon\sigma\sigma\iota$ datives that would end up with the shape $\text{--}\cup$ are generally less in favor than their alternatives in $\text{-}\sigma\iota$ ($\text{--}\cup$).⁴⁵

49.12 The Homeric situation cannot be substantially clarified by Mycenaean evidence in this case. There does appear, in Ta 722, the inst. pl. of $\acute{\kappa}\acute{\alpha}\rho\acute{\alpha}$ in the phrase *e-re-pa-te-jo ka-ra-a-pi re-wo-te-jo* '(inlaid) with ivory heads of lions'; and, in Ta 708, the inst. pl. of what must be a determinative compound: *se-re-mo-ka-ra-a-pi* 'with *se-re-mo-* heads'. This form has drawn attention⁴⁶ from two points of view. The first is its relationship to *se-re-mo-ka-ra-o-re*⁴⁷ in Ta 714. This we may leave till later (§ 63.2). The second is the writing, in both cases, with $\text{-}ra\text{-}a$ rather than the $\text{-}ra\text{-}a_2\text{-}$ that one might expect as the representation of $\text{-}r\acute{\alpha}ha\text{-}$ in $\acute{\kappa}\rho\acute{\alpha}\eta\alpha(\tau)\text{-}$ or the like.

On this basis, E. Risch⁴⁸ suggested that the Myc. form actually reflects $\acute{k}\acute{r}\acute{h}_2\text{-}\eta(t)\text{-}$. As such, this pre-form could only give $*\acute{\kappa}\acute{\alpha}\rho\alpha(\tau)\text{-}$, a

⁴⁴ So Risch², 361.

⁴⁵ Cf. Chantraine *Gramm.* 206. Since $\acute{\kappa}\rho\acute{\alpha}\tau\epsilon\sigma\phi\iota$ is not attested and might not be expected in the first place, and if one is therefore disinclined to accept this analogical explanation ($\text{-}\epsilon\sigma\sigma\iota \rightarrow \text{-}\epsilon\sigma\phi\iota$) of $\acute{\kappa}\rho\acute{\alpha}\tau\epsilon\sigma\phi\iota$, one could consider the possibility of seeing $\acute{\kappa}\rho\acute{\alpha}\tau\epsilon\sigma\phi\iota$ as a direct replacement of a genuinely old metrically required $\acute{\kappa}\rho\acute{\alpha}\eta\alpha\tau\text{-}\phi\iota$ (or its immediate outcome)—if indeed such a form ever itself existed.

⁴⁶ Risch, *SMEA* 1, 63; Perpillou, *KZ* 88, 230, note 1; Peters *Untersuchungen*, 239 f.

⁴⁷ Risch, *SMEA* 1, 53 ff.

⁴⁸ Risch, *SMEA* 1, 64.

syllable too short for the Myc. form. If the suggestion is modified, however, a $\hat{k}r\text{-}h_2\text{-}n\text{-}$ > $\kappa\rho\alpha\nu\text{-}$ / $\kappa\rho\tilde{\alpha}\nu\text{-}$, followed by a purely mechanical replacement of $-v\text{-}$ by $-\alpha\tau\text{-}$ would produce a $\kappa\tilde{\alpha}\rho\tilde{\alpha}\tilde{\alpha}\tau\text{-}$ / $\kappa\rho\tilde{\alpha}\alpha\tau\text{-}$ without $-h\text{-}$. But several objections to this can be made. Among other things, the instrumental itself would have the vocalization $\hat{k}r\text{-}h_2\text{-}\eta\text{-}$ (*bhi*) in the first instance, so that the (remodelled) result of $\hat{k}r\text{-}h_2\text{-}n\text{-}$ there would require additional assumptions. In addition, this hypothesis requires that Greek had both an oblique $\hat{k}r\text{-}h_2\text{-}n\text{-}$ and an oblique $\hat{k}r\text{-}h_2\text{-}sn\text{-}$ (to account for $\kappa\tilde{\alpha}\rho\eta\nu\alpha$, $\kappa\rho\tilde{\alpha}\nu\acute{\iota}\omicron\nu$ etc.) despite the fact that only the second has any support in Greek⁴⁹ or elsewhere.

In any case, it has been suggested more recently⁵⁰ that the pre-form of *ka-ra-a-pi* did indeed have an $-s\text{-}$, and that an argument for this is the Myc. writing itself—for it is unlikely that two like vowels that never were separated by $-h\text{-}$ would still be uncontracted in Mycenaean. As an explanation for the “premature” loss of an $-h\text{-}$ that was once there, it has been alleged⁵¹ that $-h\text{-}$ was lost earlier between like vowels than otherwise. Whatever one may think of this, it is not necessarily supported by *ka-ra-a-pi*. There is always the possibility⁵² that the Myc. plural paradigm was still $\kappa\tilde{\alpha}\rho\alpha h\nu\alpha$ / $\kappa\alpha\rho\tilde{\alpha} h\nu\omega\nu$ / $\kappa\rho\tilde{\alpha} h\acute{\alpha}\sigma\iota$ / $\kappa\rho\tilde{\alpha} h\acute{\alpha}\phi\iota$ (§ 49.11)—or its immediate outcome—and that $\kappa\rho\tilde{\alpha} h\alpha\phi\iota$ simply became $\kappa\rho\tilde{\alpha}\alpha\phi\iota$ by Grassman’s Law.⁵³ However this may be, the best pre-form

⁴⁹ As to my own explanation of both $\kappa\alpha\rho\eta\alpha\tau\text{-}$ and $\kappa\rho\tilde{\alpha}\alpha\tau\text{-}$ in the 1976 version (cf. Preface and § 9.4) as analogical but genuine forms with no etymological $-s\text{-}$, it will be clear that it is in the analysis of the formations that may be schematized $\hat{k}(e)r\text{-}h_2s(e)n\text{-}$ (and $\hat{k}(e)r\text{-}h_2sr(o)\text{-}$; cf. IV, §§ 60 ff.) that the present treatment diverges almost completely from its predecessor. Although some of the items already discussed (e.g. Hitt. *karā-* (*yar*), (*kit*)*kar*, L. *cernuus*) have been analyzed and/or aligned with one another in a fashion that sometimes differs a good deal from that of the earlier proposals, the actual items reconstructed so far ($\hat{k}or\text{-}u\text{-}$, $\hat{k}(e)r\text{-}n(o)\text{-}$; $\hat{k}er\text{-}h_2$, $\hat{k}r\text{-}\tilde{e}h_2$) remain the same. From this point on, however (starting with Hom. $\kappa\rho\tilde{\alpha}\alpha\tau\text{-}$, $\kappa\rho\tilde{\alpha}\tau\text{-}$, $\kappa\tilde{\alpha}\rho\eta\tau\text{-}$, $\kappa\alpha\rho\eta\alpha\tau\text{-}$ as reflexes of $\hat{k}r\text{-}h_2sn\text{-}$ and analogical by-forms of such reflexes), most of the particular analyses suggested here will represent a complete departure from what was proposed earlier, and the items attributed to the protolanguage (along with their suggested derivational histories) will differ in essential ways as well.

⁵⁰ Perpillou, KZ 88, 230 note 1; Peters *Untersuchungen*, 239 with note 189.

⁵¹ See previous note.

⁵² In the hypothetical paradigm given here $\kappa\rho\tilde{\alpha}h\acute{\alpha}\sigma\iota$ / $\kappa\rho\tilde{\alpha}h\acute{\alpha}\phi\iota$ are intended as rearrangements of $\kappa\rho\tilde{\alpha}h\alpha\sigma\iota$ / $\kappa\rho\tilde{\alpha}h\alpha\phi\iota$ by Wheeler’s Law. These forms (cf. § 49.3) might also have been $\kappa\alpha\rho\tilde{\alpha}h\alpha\sigma\iota$ / $\kappa\alpha\rho\tilde{\alpha}h\alpha\phi\iota$, but the basic point would remain unchanged.

⁵³ This possibility was pointed out to me by J. Schindler. As to the question of whether Grassman’s Law might not have been post-Mycenaean altogether, a complete discussion is obviously impossible here. But it may be noted that the arguments I know of that have been advanced in favor of a post-Mycenaean date either depend on the

for *ka-ra-a-pi* would seem to be $\hat{k}r\text{-}h_2\text{-}sn\text{-}bhi$, and since this could already be concluded from the Homeric evidence, the situation described above need not be modified in any serious way on the basis of this form.

50.1 Outside Greek and Indic, the forms that are of direct relevance to the question of $\hat{k}r\text{-}h_2\text{-}s(e)n\text{-}$ 'head' (neut.) are Germanic.⁵⁴ OIc. *hjarsi* 'crown of the head' (masc.) reflects $\hat{k}érh_2sē/\bar{o}(n)$,⁵⁵ a pre-

assumption (less than self-evident) that Gk. *h* could condition deaspiration as well as undergo it (e.g. Ruijgh *Études*, §§ 21, 30: $\theta\epsilon\eta\acute{o}\varsigma > *τε\eta\acute{o}\varsigma > *τε\acute{o}\varsigma$ expectable with a pre-Myc. GL), or else depend on taking certain inscriptional spellings with two aspirates as evidence that GL really had not yet applied (or taking them this way if and always if the form in question has two *etymological* aspirates in the first place). Of this last kind is the case made for a late GL by D.G. Miller (KZ 91, 143 ff.). If it is legitimate to single out from the considerable body of material presented by Miller only the relevant forms on a single Attic inscription (IG I² 76–Miller, p. 145). I do not see why it is impossible to see $\acute{\alpha}\nu\epsilon\theta\acute{\epsilon}\theta\acute{\epsilon}$ (for "regular" $\acute{\alpha}\nu\epsilon\theta\acute{\epsilon}\theta\acute{\epsilon}$ = $\acute{\alpha}\nu\epsilon\theta\acute{\epsilon}\theta\eta$ 'was dedicated') as produced by a combination of the general (if sporadic) tendency to assimilate aspirates *plus* the presence of $\theta\epsilon$ elsewhere in the paradigm of this verb ($\tau\acute{\iota}\text{-}\theta\epsilon\text{-}\mu\epsilon\nu$, $\xi\text{-}\theta\epsilon\text{-}\mu\epsilon\nu$, $\xi\text{-}\theta\epsilon\text{-}\tau\omicron$ etc.). If this combination of phonological and morphological factors can plausibly be thought to have made a double-aspirate more likely than the assimilatory tendency alone, then the non-assimilation of other forms on the same inscription ($\acute{\alpha}\theta\acute{\epsilon}\nu\text{-}\alpha\acute{\iota}\alpha\iota$, $\acute{\alpha}\gamma\alpha\theta\acute{\alpha}$, $\kappa\alpha\theta\acute{\alpha}\pi\epsilon\rho$) can be explained as lacking morphological motivation—and so can the forms in the inscription that simply appear in their regular post-GL shapes: $\tau\acute{\alpha}\chi\iota\sigma\tau\alpha$ (with an analogical aspirate available only from the synchronically unrelated $\theta\acute{\alpha}\tau\tau\omega\nu$), $\kappa\rho\iota\theta\acute{o}\nu$, and—more importantly— $\acute{\alpha}\nu\alpha\tau\iota\theta\acute{\epsilon}\nu\alpha\iota$ (since there is no regular $\theta\iota$ in the paradigm). The other cases of descriptive double aspirate in this inscription ($\hbar\acute{o}\theta\epsilon\nu$, $\hbar\epsilon\rho\phi\acute{\alpha}\nu\tau\epsilon\varsigma$, $\acute{\epsilon}\nu\theta\alpha\upsilon\theta\omicron\iota$ —cf. $\acute{\epsilon}\nu\theta\alpha\upsilon\theta\epsilon\nu$ etc.) are explained by Miller in the obviously correct analogical way. As a result, it seems unnecessary to make complicated abstract assumptions about the failure of GL to apply in the case of $\acute{\alpha}\nu\epsilon\theta\acute{\epsilon}\theta\acute{\epsilon}$. It is perfectly workable to suppose that this form is a partly phonologically and partly morphologically motivated by-form of the $\acute{\alpha}\nu\epsilon\theta\acute{\epsilon}\theta\eta$ that could have been the one and only phonologically regular form already centuries earlier. (We may leave aside the question of whether the $\theta\epsilon$ in question here might even be merely graphic.) If it should turn out (and I have little idea at the moment whether it would or not) that a majority of the double-aspirate writings of the kind collected by Miller are in fact cases in which analogical factors (in addition to the phonological one) are identifiable, the use of such spellings in support of a late GL would be decisively excluded. At the moment, it seems at least possible to suppose that GL had applied (at least once) by the time of the Pylos Linear B tablets.

⁵⁴ On the Balto-Slavic forms that point to an apparent $\hat{k}r\text{-}h_2s(\bar{o})n\text{-}$ 'hornet' cf. V (§§ 73 ff.) below.

⁵⁵ If the OIc. form is a direct reflex of anything, it would be the reflex of a $\hat{k}r\text{-}h_2s\acute{e}n$. But that is only because the outcome of $-\acute{e}(n)$ seems to have replaced that of $-\bar{o}(n)$ and $-\bar{\acute{o}}(n)$ in all OIc. masc. nom. singulars. Cf., e.g., Brugmann *Grdr*² 2.2, 125; Prokosch, *A Comparative Germanic Grammar*, 251; S. Gutenbrunner, *Historische Laut- und Formenlehre des Aisl.*, 100 f.; Jasanoff, *Beeler Studies*, 377; but also Szemerényi *Numerals*, 157 ff.

form which draws attention both to its gender and to its root vocalism. At first glance, the masculine gender could be the result of a mechanical switch of the type observed in WGmc cases like OHG/OS *namo*, OE *nama* 'name' (masc.) vs. Gothic *namō* (neut.).⁵⁶ As far as the root *e*-grade is concerned, one would then say that this original neuter formally continues a PIE amphikinetic neuter collective, and in that case it might be theoretically possible to suppose that the root *e*-grade results, at an early stage, from the imposition of the apophonic characteristics of more primary amphikinetic paradigms⁵⁷ on this more complex one, simply (and secondarily) analyzed $\hat{k}erh_2s\text{-}\bar{o}n$ (*e*-grade + \bar{o} -grade in the nom.-acc.-cf. § 42.6). It would then be in this shape that the form eventually would have become a masc. *n*-stem. In an account like this, the Vedic *n*-a neut. pl. $\acute{s}īrṣā(\bar{n}i)$ which ultimately reflects the very same collective, would be taken either as showing that the new root *e*-grade was optional, or as having been levelled at some stage. Naturally, this all depends upon the admissibility of switches in NGmc. of the type exemplified for WGmc. by the word for 'name',⁵⁸ and it might prove to be safer to take *hjarsi* as a masculine of longer standing.

50.2 In that event, one might simply compare the type (τέρμα *n.* :) τέρων *m.* etc. (§ 34.4), and assume that beside $\hat{k}r\text{-}h_2sn\text{-}$ 'head' (*n.*) there was created, at an early date, a masculine $\hat{k}erh_2s(\bar{o})n\text{-}$ with just about the same meaning. The explanation of the root *e*-grade would remain the same as that just given above for a putative neut. collective.

But whether the formation seen in *hjarsi* 'crown' was neuter or masculine in the very first instance, it would be necessary to assume that its meaning underwent specialization from 'head' to 'crown of the head'. It is worth noting, however, that the difference in meaning between $\hat{k}r\text{-}h_2sn\text{-}$ 'head' and $\hat{k}erh_2s\bar{o}(n)$ 'skull, crown' is great enough to leave room for another possibility. A semantic opposition like 'head' : 'crown' is expressed in some other cases by a given substantive (e.g. Gk.

⁵⁶ This is only meant to imply that the switch of (originally collective) $\bar{e}/\bar{o}C$ formations from neuter to masculine is otherwise known in Germanic.

⁵⁷ i.e. *e* root + \bar{o} suffix in the strong cases, zero root + zero suffix in the weak ones, and zero root + *e* suffix in the endingless locative. Cf. IIc, note 29.

⁵⁸ The admissibility of this view is in any case not enhanced by cases like OIc. *vangi* (*m.*) 'cheek' : OE *wonge*/OHG *wanga* (*n.*), which only represent divergent *n*-extensions of original *a*-stems (cf. OE *wang* in this case and *hnakkr* 'neck' beside *hnakki* within OIc. itself). So too OIc. *okli* (*m*) 'ankle' : *okla* (*n.*).

μηρός 'thigh') and a derivative of that substantive (μηρία 'thigh-bones'). For that matter, one could even compare Gk. $\kappa\rho\alpha\eta\nu-$ / $\kappa\rho\alpha\eta\nu-$ 'head' itself vs. $\kappa\rho\alpha\eta\nu-\acute{\iota}o-$ 'crown, skull'.

On the morphological side, there are a few cases in which a masculine substantive of the structure $X + \bar{o}n$ (where X itself is a nominal stem) has a "locative" function ('found in/on X ') that is semantically reminiscent of what is observed in the case of $\hat{k}erh_2s\bar{o}(n)$ 'crown'. A thorough treatment of this phenomenon is not possible here, but we may cite a couple of examples that would at least appear to fit the description of $X + \bar{o}n$ derivatives with "locative" function, and indicate that the possibility of classing $\hat{k}erh_2s\bar{o}n$ 'top of the head' among them seems a perfectly open one at the moment.

50.3 Clearest is the pair $dhe\hat{g}h-\bar{o}m$ 'earth'⁵⁹ (Hitt. *tekan*, Gk. $\chi\theta\acute{\omega}n$ etc.) : $dh\hat{g}h-(e)m-\bar{o}n$ ⁶⁰ (L. *hemō*,⁶¹ Lith. *žmuō*, Goth. *guma* etc.) ('(found, living, etc.) on earth' > 'human being'). The general rarity of formations in $-\bar{o}n-$ with a precisely comparable function weighs against simply reconstructing a "free-floating" suffix $-(e/o)n-$ which just happens to make locative derivatives.⁶² It therefore would seem more satisfactory from the very outset to attempt to relate this relatively rare combination of form ($-\bar{o}n-$) and function (locative) to a specific and somewhat exceptional set of circumstances. This may be done in this case⁶³ by noting that the Vedic paradigm of the m -stem 'earth' includes, in the oblique singular:

⁵⁹ See Schindler, *Die Sprache* 13, 191 ff. for phonological and morphological details.

⁶⁰ The analysis $dh\hat{g}h-(e)m-Hon-$, with the possessive suffix $-Hon-$ (K. Hoffmann, *MSS* 6, 35 ff.), '*having > occupying the earth' would make perfect sense, but is excluded on phonological grounds, since it would be difficult to get to Lith. *žmuō* from a $(dh)\hat{g}hm-Hon-$.

⁶¹ OL. *hemo* directly found in *hemonem* (P. ex Fest., 100M) and probable in any case in *nemo* (*ne-hemo*). Cf., e.g., Leu², 101, 364; E-M *DELL*, 297. The relationship between *hemo* and *homo* (to which cf. O. *humuns*, U. *homonus*) is yet a further question.

⁶² A "substantivizing" $-(\bar{o})n-$ (type Gk. $\Sigma\tau\rho\alpha\beta\acute{\omega}n$: $\sigma\tau\rho\alpha\beta\acute{\omega}ς$, L. *Rufō* : *rufus*, OLith. *pirmuō* : *pirmas* etc.) would at the very least require unnecessarily complicated further assumptions here.

⁶³ The view about to be presented was the subject of so many discussions (and debates) between J. Schindler and myself that I feel compelled to say at the very least that it is presented here in a better form than would have been the case without those criticisms and suggestions. But naturally I do not wish to imply that Professor Schindler necessarily endorses any particular aspect of the following proposals—much less in the precise form which they take here.

g.-abl.	<i>jm-áh</i>	(cf. Av. <i>zəmō</i>)	<	<i>dhgh-m-és</i>
inst.	<i>jm-á</i>	(cf. Av. <i>zəmə</i>)	<	<i>dhgh-m-éh₁</i>
loc. 1	<i>kṣám-i</i>		<	<i>dhgh-ém-i</i>
loc. 2	<i>jm-án</i>		<	<i>dhgh-m-én</i>

There are, in effect, two different locative singulars. The first of them is simply the original endingless locative of the basic amphikinetic *m*-stem expanded by *-i* in the usual way.⁶⁴ The second, however (*jmán*), to all appearances, has an additional *-an* formant and locative function.⁶⁵ [*]

The coexistence of a locative in *-en* to the basic 'earth' paradigm and an *-ōn-* derivative with locative semantics to the same paradigm naturally suggests drawing some connection between them. One might think of the scheme:

dhēgh-ōm 'earth' → *dhgh-m-én* 'on earth' → *dhgh-m-ōn-* 'a human'⁶⁶

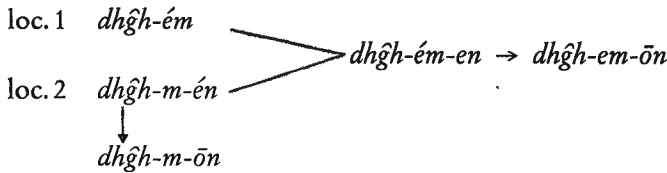
50.4 In this view, the substantive that finally results has the status of a derivative without suffix (§§ 35.2 ff.), but a derivative specifically of the locative in *-en*. In addition, it would seem that the formation of this locative *-ōn* stem involved the introduction of a full grade, at least optionally, in L. *hemo* (*dhgh-em-ōn*), as opposed to Lith. *žmuō* (*dhgh-m-ōn*) and Goth. *guma* etc. (*dhgh-m-m-ōn*). Once again (cf. § 50.1 f.), this full grade could result from an assimilation of this secondary formation to the shape of primary amphikinetics by way of insertion of a new full grade into an unanalyzed—or unanalyzable—(*dh*)*ghm-*, with the consequence that the new *e*-grade was inserted, diachronically speaking, in the "wrong" place (i.e. in the *m*-suffix rather than the root itself—but cf. § 42.6 and IIIa. n. 17). Theoretically, it might even be possible to reconstruct a fully ablauting *dhghém-ōn* (*hemo*) / *dhghm-n-és* etc. (*žmuō*, *guma* etc.) with divergent levelling.

⁶⁴ But cf. third addendum to § 50.5.

⁶⁵ On *-en* locatives in Skt. and elsewhere that are not or need not be locatives of *n-* or *r/n*-stems cf. W-D 2.2, § 80, c, α (*gāmbhan*); 3, §§ 31 a, 130 c, 133 a—esp. no. 3 (*jmán*); and further references—esp. to Bartholomae, *BB* 15, 25 ff. Cf. also the *-er* locative to the same *m*-stem for 'earth' in Av. *zamarə/zəmarə*, *zamarə-/zəmar-* (*gūz*). On *-er* locatives to non-*r*(*n*) stems cf. W-D 2.1, § 88 e β; 3, §§ 31 b, 119 d, 160 e; also § 68 below.

⁶⁶ Up to a point, one might somehow compare the RV prepositional phrase (for all intents and purposes) *pāri-jmān* 'all around the earth' (e.g. RV 2.28.4) beside *pārijmā*, descriptively an adjectival suffixless governing compound 'rushing around, omnipresent'.

50.5 There is some reason, however, to consider a different possibility for the *e*-grades in this class of formations. Namely, one might imagine that *dhghm-ōn* (*žmuō*) and *dhghmm-ōn* (*guma* etc.) are the direct and “regular” suffixless derivatives of the locative *dhghm-én* (*jmán*), while *dhghem-ōn* (*hemo*) takes as its point of departure a locative with double full-grade: *dhghem-en*. This irregular structure could result, in this case, from a compromise between locative *dhghém* (cf. *kšámi*) and locative *dhghm-én* (*jmán*) [*]. The situation might be represented as:



Whether or not a locative *dhghémen* as such needs to be reconstructed, it is to be noted that there are some isolated locatives that do show such a double full grade structure, which ought not to be original, and in which the first of the two full grades seem to result from a *vṛddhi* process. Of the type *X + en* ‘in, at, on *X*’ could be mentioned *ghéjmen* ‘in winter’ (YV, TS, B *héman*) vs. *ghijém* / *ghim-* / *ghijém* ‘winter’ (Av. *ziia/zamō*, *zimō*; L. *hiems*)⁶⁷ and *g^(h)émbhen* ‘in the depths’ (VS *gámbhan*) within the I-Ir. Caland system⁶⁸ of Av. *jafra-* ‘deep’, *jaifi-vafra-* ‘with deep snow’, AV *gabhi-śák* ‘deep down’, RV *ga(m)bhīrá-* ‘deep’. Among locatives of the type *X + er*⁶⁹ ‘in, at, on *X*’, a prime

⁶⁷ One could assume an Indo-Iranian *man*-stem *zhajman-* (masc. or neuter), but this would only require the further assumption that all direct traces of that hypothetical formation, except its endingless locative, have been eliminated in favor of the *m*-stem that appears at least in Avestan. Nor can Gk. $\chi\epsilon\iota\mu\alpha$ and $\chi\epsilon\iota\mu\acute{o}\nu$ favor the reconstruction of such a formation, since it is possible that an *-en* locative *ghéjmen*, made to the *m*-stem, was re-analyzed in Gk. as *khej-men* (i.e. a *men*-stem endingless locative) and that it is precisely this that led to the creation of *khejmn* and *khejmōn* as back-formations.

⁶⁸ Evidence for a Caland system of derivatives to a given root is in and of itself a fairly good argument against the assumption of an *r/n*-stem to that same root. The observable distributions indicate that Caland adjectives of the oldest types are best taken as denominative to root nouns, and it is extremely rare that a root will make both an *r/n*-stem and a root noun (with or without a derived Caland system). It is consequently best to see *gámbhan* beside VS *gambh-ár(a)-* ‘depth’ as belonging in the *jmán/zamara* category (cf. note 65 above), and not as evidence of an *r/n*-stem that is nowhere found as such in any event.

⁶⁹ Cf. note 65 just above.

example is $h_2eys-\bar{o}s/h_2us-(s)-\acute{e}s$ (RV $us\acute{a}h/us\acute{a}h$, Gk. ἠώς, L. *auror(a)* etc.) 'dawn' with locative $h_2us-(s)-\acute{e}r$ 'at dawn' (RV $usar-$, Gk. ἦρι < ἦρι(ι)⁷⁰ etc.). But beside this structure, Vedic also has a *vasar-* (*vasar-hán-* 'striking early') reflecting, or as if reflecting [***], $h_2ues-(s)-er$ with two full grades. Related to this question is the apparently early presence of two full grades in normal endingless locatives like $h_2e\check{e}r(i)$ [***] (> Gk. ἀρι- in ἄριστον 'breakfast'). It would seem that double full grade became characteristic of endingless, *-en*, and *-er* locatives in general, and it may be that one starting point was provided by a few cases like the hypothetical *dhġh-ém-en*, produced as suggested above.

It is possible, therefore, that a de-locative formation like *dhġhem-ōn* owes its *e*-grade to a double full grade in the underlying locative itself. But the case is ambiguous.

50.6 For present purposes, it is not essential to be able to decide at what stage of the whole process the new full grade was introduced into a form like *dhġhemōn*. It may have been an optional step in the formation of the locative itself, or only in the formation of the amphikinetic suffixless derivative of this locative. The points to be retained are only 1) that the locative of one paradigm can serve as the basis for a suffixless derivative (a second paradigm) with a locative meaning and 2) that derivatives of this sort can show new full grades.

Among the body-part terms, the various words for 'navel' are made from a root whose basic shape is h_3nebh-/h_3nobh- to judge by practically all the unambiguous forms: Skt. *nābhi-*, *nābhya-* 'hub, navel, kin'; Av. *nabā-nazdišta-* 'next of kin'; OHG *naba* 'hub', OE *nafela* 'navel'; OPr. *nabis* 'hub, navel' etc. This indicates that those additional forms that are phonologically ambiguous between zero grade h_3nbh- (> h_3mbh-) and schwebeablauting full grade h_3enbh- (> h_3embh-) should probably be taken as zero grades if there is no particular reason to view them as products of derivational processes that are known to entail new "misplaced" full grades. The reconstruction h_3nbh- (necessary in any case for Irish *imbliu* 'navel') is thus the most obvious one for Gk. ὀμφαλός 'navel, knob, boss (of a shield), center'⁷¹ and even L. *umbilicus* 'navel, projection, center' and *umbo* 'boss'.⁷²

⁷⁰ Cf. most recently Peters *Untersuchungen*, 32 ff.

⁷¹ Cf. Rix, *MSS* 27, 79 ff.

⁷² Cf. Rix, *MSS* 27, 91; Greppin, *Glotta* 51, 112 ff.; Hamp, *Glotta* 54, 261 ff.; Greppin, *Glotta* 56, 98 ff.

Latin *umbo*, interpreted in this way, would point to an amphikinetic $h_3n(e)bh\text{-}(\check{o})n\text{-}$.⁷³ But in Old Saxon is found the acc. pl. (m.) *ámbón* 'abdomina'⁷⁴ (Gmc. *amban-* cf. OHG *amban*, pl. *ambana* < thematicized *ambana-* 'belly, abdominal flesh of a pig'). A Germanic *amban-* (< $h_3enbh\text{-}on\text{-}$) 'belly' presents a combination of schwebeablaut and divergent (derivative) meaning. If $X + en$ 'in, at, on X ', however, can serve as the basis of $X + \bar{o}n$ 'what is in, on, at X ', there is no reason, in principle, to exclude the possibility that a locative in $-en$ within a paradigm that was an n -stem in the first place could also produce such a de-locative derivative. One could thus deal with Gmc. *amban-* 'belly' by comparing it to L. *hemo* with respect to its meaning and root vocalism:

$\{h_3n(e)bh\text{-}(\check{o})n\text{-}$ 'navel' (*umbo*)
|loc. $h_3n\bar{b}bh\text{-}\acute{e}n$ 'at the navel'



$h_3enbh\text{-}\check{o}n\text{-}$ '(region) at the navel' > 'belly'

As usual, it is possible to assume that the schwebeablauting root e -grade was introduced into the locative of a $h_3n\bar{b}bh\text{-}\bar{o}n$ 'navel' itself: thus $h_3\acute{e}n\bar{b}bh\text{-}en$ 'at the navel' (with the structure of $\acute{g}h\acute{e}i\acute{m}en$, $g^{(u)}\acute{e}mb\acute{h}en$ as above) $\rightarrow h_3enbh\check{o}n\text{-}$.

Finally, there is a possibility that $-e/on\text{-}$ was very marginally generalized with the function of expressing this kind of (locative) relationship between closely related body part terms. An example of this might be Gk. $\kappa\acute{\omega}\lambda\omicron\nu$ 'leg' : $\kappa\omega\lambda\acute{\eta}\nu$ 'thigh' / $\kappa\omega\lambda\eta\nu\epsilon\varsigma$ 'bones of the leg' where the n -stem can be given a basic meaning 'in/part of the leg'.⁷⁵

50.7 Returning to the question of OIc. *hjarsi* 'skull, crown' ($\hat{k}erh_2son\text{-}$) with the possibility of locative $-e/on\text{-}$ derivatives (including some body parts) in mind, there are two obvious points to be made.

⁷³ Beside the l -formation(s) seen, e.g., in OE *nafela*, OIr. *imblíu*, Gk. $\acute{o}\mu\phi\alpha\lambda\acute{o}\varsigma$, and *umbilicus* itself. This pattern (n - beside l -formation) is well-established by a fair number of parallels of the type $\acute{\alpha}\gamma\kappa\acute{\omega}\nu$: $\acute{\alpha}\gamma\kappa\acute{\alpha}\lambda\eta$ etc. For an i -formant (as in Skt. *nābhi-*) beside the l and n ($\acute{o}\mu\phi\alpha\lambda\acute{o}\varsigma$, *umbo*) cf., e.g., L. *axis* : OHG *ahsala* : Gk. $\acute{\alpha}\xi\acute{\omega}\nu$ etc. 'axle'.

⁷⁴ Lidén, KZ 61, 17 ff. Latin *umbo* is preferably not equated exactly with Gmc. *amban*—simply on semantic grounds. But this is not crucially important, since the Germanic formation has both schwebeablaut and an exocentric meaning (i.e. exocentric to 'navel') in any case.

⁷⁵ On Gk. $-\eta\nu$ beside (and/or replacing) $-\omicron\nu$ cf., most recently, Peters *Untersuchungen*, 166 with further references.

Semantically, the relationship between 'head' and 'on (top of) the head' (> 'crown') is certainly parallel enough to 'navel' : 'belly', 'leg' : 'thigh', and (more generally) 'earth' : 'earthling' that $\hat{k}erh_2son\text{-}$ 'crown' could be classed with them. Formally, therefore, if derivation from locatives is to be recognized, a straightforward scheme suggests itself: loc. $\hat{k}erh_2sén$ 'in/on the head' (RV $\acute{s}ir\acute{s}án$) → $\hat{k}erh_2s(\acute{o})n\text{-}$ '(part) in/on (top of) the head' > Gmc. *hersan-* 'skull, crown' (*hjarsi*), which shows a new full grade inserted into unanalyzed $\hat{k}r(h_2)s\text{-}$, and is in this respect parallel to (*dh*) $\acute{g}hm\text{-}$ → (*dh*) $\acute{g}hem\text{-}$ (*hemo*) and $h_3nbh\text{-}$ → $h_3enbh\text{-}$ (*amban-* in Gmc. itself). It is absolutely clear in any case (cf. § 50.2) that the root *e*-grade of *hjarsi* provides no grounds for assuming that the *s*-stem descriptively presented by I-Ir. ($\acute{s}ir\acute{s}a\text{-}$ /*sarah-*) ever showed a full-grade root anywhere in its own paradigm (cf. §§ 40 ff.).

50.8 Finally, Gmc. *hers(a)n-* 'skull, crown' has at least one clear derivative of its own that supplies a word for 'brain'. OHG *hirni* (n.) reflects *herzn-ija-*, with a derivational formant that may be exactly compared to that of Gk. $\kappa\rho\acute{\alpha}\nu\acute{\iota}\omicron\nu$ 'crown',⁷⁶ $\iota\nu\acute{\iota}\omicron\nu$ 'occipital bone', $\mu\eta\rho\acute{\iota}\alpha$ 'thigh bone' etc. (cf. § 49.3 a): *hers(a)n-* 'skull' → *herzn-ija-* 'belonging to/in the skull' > 'brain'.

In OIc. itself, the word for 'brain' is *hjarni* (masc.), as if reflecting a *herznan-*. The history of this formation is somewhat more ambiguous than that of OHG *hirni*. It is perhaps best to take this *herznan-* as a derivative of masc. $\hat{k}erh_2s\acute{o}(n)$ (> *hersan-*) 'crown' rather than neuter $\hat{k}erh_2sn\text{-}$ 'head' because the masculine is the formation that is actually found in Germanic after all – and specifically in OIc. But this still leaves a couple of possibilities open. It may be significant that beside *hjarni* is quoted⁷⁷ a synonym *hjarn* (in the gen. *hjarns*), a masc. or neut. *a*-stem. If this form is taken seriously, the pair *hjarn* : *hjarni* would be an example of the frequent pattern (*-a* : *-an-*) exhibited by OIc. *hnakkr* 'neck' : *hnakki* 'id', *gómrr* 'palate' : OSwed. *gome*, OE *wang(m)* 'cheek' : OIc. *vangi* (beside n. *wangan-* in W. Gmc.), OIc. *gall* (n.) 'gall' : OE (m.) *gealla* (beside f. *galla* in OS/OHG), OIc. *hæll* (m.) 'heel' : OE (m.) *hēla*, and (farther afield) $\acute{o}\mu\phi\alpha\lambda\acute{o}\varsigma$: OIc. *nafli* / OHG *nabalo* / OE *nafela* 'navel'.⁷⁸ It must be granted, of course, that a sufficiently large number

⁷⁶ Although the *-ija-* of Gmc. *herzn-ija-* is the exact formal and functional equivalent of the *-ijo-* of Gk. $\kappa\rho\acute{\alpha}\nu\acute{\iota}\omicron\nu$, the two resulting derivatives ought to be independent. The Gk. form presumably has the neuter oblique $\kappa\rho\acute{\alpha}\nu\eta\nu\text{-}$ as its basis, while the Gmc. derivative was made from the masc. *hers(a)n-* (OIc. *hjarsi*), itself a derivative of the neuter.

⁷⁷ Cf. Jónsson *Ordbog*, sv *hjarn*.

⁷⁸ Further examples in, e.g., Kluge *Stammbildungslehre*³, § 78.

of pairs of synonymous *a*- and *an*-stems at any given stage could easily have led to the back-formation of a *herzna*- from a *herznan*- (or *hjarn* from *hjarni*).

But even if *hjarn* cannot count for much, the frequency of the re-modelling of *a*-stems to *an*-stems (especially common among bodypart terms) might well incline us to see OIc. *hjarni* as ultimately reflecting a *herzna*- 'brain' in any case—whether or not this is really directly continued by the by-form *hjarn*. If, on the one hand, it seems desirable to take *hjarni* (*herznan*-) specifically as a derivative of *hjársi* (*hersan*-)—partly because of the consideration just mentioned above and partly because of OHG *hirni* (*herzn-ija*-)—and if, in addition, it seems most reasonable to class it (for its second *-(a)n*- formant) with *hnakki*, *vangi*, etc., we might try to justify a *herzna*- 'brain'. This can be done in more than one way, but perhaps the most satisfying hypothesis is that $\hat{k}erh_2s\ddot{o}n\text{-}/\hat{k}erh_2sn\text{-}$ 'crown, skull' was the basis of an early derivative $\hat{k}erh_2sn\text{-}\acute{o}$ - 'of the skull/crown, cranial' (> Gmc. *herzna*- beside *herznija*-) which was substantivized to 'cranial contents' > 'brain'. Finally, this *a*-stem became an *an*-stem in the usual way. Naturally, this cannot be insisted upon in detail, but it does allow *herznan*- 'brain' to be interpreted as a derivative of *hersan*- 'skull' straightforwardly.

Mid. Dutch *hersen*, *hersene*, *hersen* and Mod. Dutch *hersen*, *hersens* (f. *pl. tant.*) 'brains'⁷⁹ also certainly belongs here, but the formation originally involved is ambiguous. The stem from which it is derived is *hersn*- or *herzn*-,⁸⁰ but it does not seem possible to decide what followed. On the strength of OHG *hirni*, the Dutch form is usually taken to reflect a neuter (*i*)*ja*-stem, and its feminine gender already in Mid. Dutch is no real drawback.⁸¹

In any case, the relationship of the Germanic forms just surveyed to the Greek and Indic neuter *n*-stem could be something like:⁸²

⁷⁹ A *herne* (neut. and fem.) occurs in Middle Dutch, but is apparently an eastern dialect word (cf. OHG *hirni*) which was eliminated in favor of *hersen(en)*, which remained the normal form. Cf. Verwijs-Verdam, *Middelnederlandsch Woordenboek*.

⁸⁰ Cf. J. Franck, *Mittelniederländische Grammatik*, § 100; M.J. van der Meer, *Historische Grammatik der niederländischen Sprache*, § 81.2.

⁸¹ Franck (*op cit* note 80), § 180.1.

⁸² There are admittedly other thinkable analyses of Gmc. *hers(a)n*-:

a) One might look into the possibility of seeing neut. (obl.) $\hat{k}erh_2sn\text{-}$ beside masc. $\hat{k}erh_2s(\delta)n\text{-}$ as a pair something like neut. *term(e)n*- : masc. *term(\delta)n*- (§ 34.4)—at least if the formation of amphikinetic masculines of this sort may reasonably be thought to have potentially involved the creation of new root full grades. Even so,

{ neut. obl.:
 $\hat{k}r\text{-}h_2sn\text{-}$ ($\acute{s}ir\acute{s}n\text{-}/\kappa\rho\acute{\alpha}\alpha\tau\text{-}$)
 with loc.:
 $\hat{k}r\text{-}h_2s\acute{e}n \rightarrow$ m. $\hat{k}erh_2s(\acute{o})n\text{-}$ 'crown, skull' > Gmc. $hers(a)n\text{-}$ (Olc. $hjarsi$)
 'on the head' ↳ $herzn\text{-}ija\text{-}$ 'brain'
(OHG $hirni$)
↓
 $\hat{k}erh_2sn\text{-}\acute{o}$ 'cranial' > $herzna\text{-}$ → $herzn\text{-}an\text{-}$ 'brain'
(hjarn?) (Olc. $hjarni$)

however, it should be kept in mind that while neut. $term(e)n\text{-}$ was proterokinetic, this is at the very least indemonstrable for neut. $\hat{k}r\text{-}h_2sn\text{-}$ (§ 49.2).

b) Another possibility (at least a theoretical one) is that of supposing that Gmc. $her\text{-}san\text{-}$ is a rather early example of the phenomenon ($-a\text{-stem} \rightarrow -an\text{-stem}$) exemplified (§ 50.8) by Olc. $hnakkr$: $hnakki$, OE $wang$: Olc. $vangi$, and Gk. $\acute{o}\mu\phi\alpha\lambda\acute{o}\varsigma$: Olc. $na\phi\lambda\acute{i}$ / OHG $nabalo$. That is to say, one might consider the hypothesis that from $\hat{k}r\text{-}h_2\text{-}es\text{-}$ 'head' (cf. Skt. $\acute{s}irah$) was made a straightforward thematic derivative with $v\acute{r}ddhi$: $\hat{k}erh_2s\text{-}o\text{-}$ 'belonging to the head' (cf. § 33.6), whence a Gmc. $her\text{-}sa\text{-}$ 'crown (of the head)', extended to $her\text{-}san\text{-}$ (Olc. $hjarsi$) in time to produce the derivatives $herzn\text{-}ija\text{-}$ (OHG $hirni$) and $herzn\text{-}a(n)\text{-}$ (Olc. $hjarni$).

As support for the reconstruction of an already PIE derivative $\hat{k}erh_2s\text{-}o\text{-}$ 'belonging to, part of, found in the head', one could even invoke Latin $cer\acute{r}it\text{-}us$ 'demented' (Pl +), assuming that the $\hat{k}erh_2s\text{-}o\text{-}$ in question yielded a Latin word for 'brain' that served as the basis of a possessive derivative in $-i\acute{t}o\text{-}$: a pre-Latin $*keraso\text{-}$ → $keras\acute{i}to\text{-}$ 'having a brain'. For the type cf. $mell\acute{i}tus$ 'honeyed', $fortu\acute{i}tus$ 'accidental'. Semantically, the use of a possessive $keras\acute{i}to\text{-}$ to mean 'insane' can be precisely paralleled by the use of $cerebr\acute{o}sus$ (*'full of brain') to mean exactly the same thing – 'insane'. The phonological development is also straightforward: $keras\acute{i}to\text{-}$ > $cers\acute{i}to\text{-}$ > $cer\acute{r}it\text{-}us$; for the syncope cf. $leiberisamo\text{-}$ > $leibersamo\text{-}$ > $liberrimus$ etc.

III c. $\hat{k}r\acute{e}h_2 / \hat{k}r h_2 sn-$ vs. $\hat{k}r h_2 os / \hat{k}r h_2 sn-$

51.1 The Germanic material thus points ultimately to the same neuter *n*-stem for 'head' as is found in the Greek and Indic oblique. It is this neuter word for 'head' that presents a major problem. Combining the Greek and I-Ir. information, there is descriptively a three-way alternation of stems: $\hat{k}r\acute{e}h_2$ (ἡῤα etc.) : $\hat{k}r h_2$ -o/es- (σίρας-/sarah-) : $\hat{k}r h_2$ -s(e)n- (σίρς(a)n-, ἡῤᾱḥατ-/ἡῤᾱḥv- etc.). More specifically, there are two different nom.-acc. singulars that both have an oblique $\hat{k}r h_2 s(e)n-$. What is unclear, of course, is whether, and at what stage, the protolanguage had a heteroclitic paradigm for 'head', and if so what kind.

51.2 Since Greek and Indic agree exactly on the shape and domain (oblique only) of neuter $\hat{k}r h_2 s(e)n-$, and since, in addition, both are entirely consistent with the Germanic facts, there is every reason to look into the possibility of simply reconstructing this as the oblique of the PIE neuter word for 'head', as is traditionally done. For the original *n*-a, however, this means that either I-Ir. $\hat{k}r h_2 os$ is an innovation, or Greek $\hat{k}r\acute{e}h_2$ is an innovation, or that both are innovations. If there is a standard view on this question, it would be that both are innovations, inasmuch as an *r/n*-stem ($\hat{k}r h_2 s r / \hat{k}r h s(e)n-$ or the like) is often reconstructed.¹

The discussion of this interpretation, and particularly of the material upon which the *n*-a *r*-stem is based, is the subject of IV below. A full presentation of the grounds for rejecting a PIE *r/n*-stem for 'head' must be postponed until then, since the question of such a hypothetical *r/n* stem depends largely on what is the best view of the oblique *n*-stem meaning 'head', which is at least directly reflected in the actual paradigm of the word in two languages.

51.3 But although the arguments against an inherited $\hat{k}r h_2 s r / \hat{k}r h_2 sn-$ 'head' will be given in detail only later, we may anticipate some of them in brief form by pointing out that

¹ See, e.g. Frisk *GEW* 2, 5 with references to the older literature; Perpillou, *KZ* 88, 230 ff.; Peters *Untersuchungen*, 228 ff.

1) Such a reconstruction necessarily means that in this case an r/n -stem—not an otherwise unknown formation either in Vedic or in Greek—was not only replaced in both languages, but was independently replaced by two different paradigms, each of which is unique in that language, and for which there is no identifiable model or parallel (§§ 52 ff.).

2) A nom.-acc. $\hat{k}_r h_2 s_r$ in the meaning 'head' is based partly on a number of $-ro-$ and $-rā-$ derivatives in Greek and Latin and partly on an r -stem in Greek only. But the $-ro/\bar{a}$ -formations are morphologically ambiguous between $\hat{k}(e)rh_2 sr-o-$ and $\hat{k}(e)rh_2 s-ro-$ (i.e. with a $-ro-$ that is by no means automatically segmentable²), and are therefore no evidence for an r -stem—not to speak of an r -stem that specifically means 'head'. On the other hand, there is no real doubt that Greek has an r -stem, but it probably does not mean 'head'. Consequently, even though one must grant a direct connection between the Greek r -stem and the Greek and Latin $-ro/\bar{a}$ -formations, there is still no evidence of a $\hat{k}_r h_2 s-r$ -that means 'head' (§§ 64 ff.).

3) The assumption of a $\hat{k}_r h_2 s_r / \hat{k}_r h_2 sn-$ 'head' means renouncing out of hand what looks like a promising set of parallels—namely the series of neuter body part terms that show $-n$ -stem obliques (RV $asth-n-$ 'bone', $\bar{a}s-n-$ 'mouth', $dos-n-$ 'forearm'; Gk. $\sigma\upsilon\alpha\tau-$ 'ear', $\gamma\omicron\upsilon\nu\alpha\tau-$ 'knee' etc.) to nom.-accusatives that show either zero ($dóh$, $\gammaόνυ$) or a formant other than $-r$ ($\acute{a}sth-i$, $\bar{a}s-íya-$).³

51.4 If oblique $\hat{k}_r h_2 sn-$ in the paradigm for 'head' is taken as inherited (§ 51.2), and if a nom.-acc. $*\hat{k}_r h_2 s_r$ never was included in that paradigm, we are back to reconstructing oblique $\hat{k}_r h_2 sn-$ 'head' (§ 51.2) and explaining either $\hat{k}_r h_2 os$ or $\hat{k}_r \acute{e}h_2$ as an innovation. It soon becomes clear, however, that neither one can be explained as such without difficulty. Neither the Greek paradigm as it stands nor the Sanskrit one is quite satisfactory as a reconstruction of the PIE state of affairs.

² And if it is segmentable ($-r-o-$), it still would not necessarily contain the r formant that forms the nom.-acc. stem of the r/n heteroclites. Cf. §§ 60 ff.

³ This is of course not intended to mean that a $(C)_r / -(C)n$ -stem would be hard to parallel among neuter body-part terms. It is merely being emphasized that Ved. $\acute{s}írah / \acute{s}írh_2 n-$ in particular ($X/X+n$), as it actually stands, is descriptively matched exactly by paradigms like $dóh/dos_n-$ in Vedic itself and by $\omicron\upsilon\varsigma$ ($\omicron\upsilon\varsigma os$)/ $\omicron\upsilon\alpha\tau-$ ($\omicron\upsilon\varsigma(s)n(t)-$) elsewhere, and that dos_n- and $\omicron\upsilon\alpha\tau-$ are in turn best considered together with Ved. $asthn-$, $\bar{a}sn-$, Gk. $\gamma\omicron\upsilon\nu\alpha\tau-$ etc.

52.1 It would appear at first glance that the partial levelling of $\hat{k}r\acute{e}h_2/\hat{k}rh_2sn\text{-}$ (as in Greek) to $\hat{k}rh_2os/\hat{k}rh_2sn\text{-}$ (as in Skt.) is a more promising approach than assuming the reverse. But this merely amounts to projecting $\hat{k}r\acute{e}h_2/\hat{k}rh_2\text{-}s(e)n\text{-}$ back to the protolanguage, where it is no easier to explain. Such a paradigm cannot be original, and can therefore only have been inherited into Greek and I-(Ir.) if it can be plausibly explained as an innovation of PIE.

Two kinds of innovations come into question. Either $\hat{k}r\acute{e}h_2/\hat{k}rh_2\text{-}$ (cf. $\kappa\acute{\alpha}\rho\alpha$ /Hitt. $-\textit{kar}$) became $\hat{k}r\acute{e}h_2/\hat{k}rh_2\text{-}s(e)n\text{-}$ on a purely formal analogical model (in which case we must demand an actual analogical proportion), or else it must be assumed that the oblique (and only the oblique) was assimilated in a more amorphous way to some well-established PIE item which had an oblique in $\text{-}s(e)n\text{-}$ within a more "normal" type of paradigm, and which had some very close semantic connection to 'head'. A close semantic connection would be practically indispensable to an explanation of this second type. Naturally, the ideal solution would be based on an item which was both in the right semantic area and could have served as an exact formal model.

52.2 Neither this ideal solution, however, nor a purely formal solution seems to be obtainable here. What would be required is a paradigm, securely reconstructable for PIE, of the form $n\text{-}a\ X/\textit{obl. } X + s(e)n$ where X is a nominal stem (preferably monosyllabic) which shows lengthened (or at least full) grade in the nom.-acc. vs. zero (or e for a TeT root) in the oblique. It would certainly be possible to fill these requirements with hypothetical constructs. For example, on the basis of the root noun $h_3\acute{e}k^{\#}$ 'eye' (cf. OCS dual $o\check{c}i$, Gk. coll./pl. $\acute{\omega}\pi\alpha$ ⁴ 'face') plus the $ak\check{s}n\text{-}$ oblique of Skt., there could be constructed a $n\text{-}a\ h_3\acute{e}k^{\#}/\textit{obl. } h_3ek^{\#}\text{-}sn\text{-}$, but this must be considered a very implausible paradigm for PIE. It leaves no room for the $ok^{\#}\text{-}es\text{-}$ of Slavic (OCS oko) and Sanskrit itself (dual $ak\check{s}\text{-}\acute{i}$), and arbitrarily elevates $ok^{\#}\text{-}sn\text{-}$ (Skt. only) to the status of an inherited form. No model with the requisite characteristics can safely be attributed to the protolanguage.

52.3 The possibility of a PIE $\hat{k}r\acute{e}h_2/\hat{k}rh_2sn\text{-}$ thus stands or falls with the admissibility of the more amorphous kind of development described above. It must be said from the outset that this sort of solution is in and of itself much less desirable than one which operates with a morphological model plus an analogical proportion. Closely asso-

⁴ Cf. § 59.8 with the addendum.

ciated lexical items do undoubtedly become assimilated one to the other phonologically and morphologically, and there is no reason to deny that this could have happened in PIE. But more than just this would be required in the present case. As the result of some such development, it would have to be assumed that an otherwise non-existent paradigmatic alternation (the $X/X + s(e)n\text{-}$ of $\hat{k}r\acute{e}h_2/\hat{k}r\text{-}h_2\text{-}s(e)n\text{-}$) was created and kept.

Quite apart from such general objections, it is not even very easy to produce many items that are certain to have had an oblique in $-s(e)n\text{-}$ (regardless of the $n\text{-}a$) in PIE and to have belonged to the relevant semantic group. On the one hand it may be doubted that Skt. $akṣṇ\text{-}$ 'eye' is inherited (so too $doṣṇ\text{-}$ 'forearm', $āsn\text{-}$ 'mouth' and others). At the same time, however, PIE $(-sṛ?) / -s(e)n\text{-}$ stems⁵ that denote parts of the body⁶ are not plentiful either. One might think of Hitt. $ḫaršār$ 'heads' beside $ḫaršan(a/i?)$ 'head, person' and even assume an original $r/n\text{-}$ stem, but the word is of unknown etymology, and is not a good choice as the model for $\hat{k}r\text{-}h_2 + s(e)n\text{-}$ in any case, since it is Hittite that actually has $ḫaršan\text{-}$, but also has $(kit)\text{-}kar$, which is definitely an oblique form of 'head' (§ 28.4) but not a $-s(e)n\text{-}$ stem.

52.4 A $\hat{k}r\acute{e}h_2/\hat{k}r\text{-}h_2\text{-}sn\text{-}$ for PIE then so far suffers from the lack of a plausible explanation of its origin (which must be secondary) in the protolanguage. In addition, however, this reconstruction would require that the I-Ir. $n\text{-}a$ $\hat{k}r\text{-}h_2os$ (or $\acute{s}ṛas$) is somehow back-formed to the oblique. But once again a model is lacking. Even if I-Ir. already had paradigms like $daṣṣ/daṣṣ\text{-}n\text{-}$ (Skt. $dóḥ/doṣṇ\text{-}$) 'forearm' and $*ās/ās\text{-}n\text{-}$

⁵ The Gk. and I(-Ir. W-D 2.2, 925) infinitives in $-sen(i)$ – e.g. $\phi\acute{\epsilon}\rho\epsilon\text{-}\eta\epsilon\nu > \phi\acute{\epsilon}\rho\epsilon\iota\nu$, RV $-bhū\text{-}śāni$, $ne\text{-}śāni$ etc. – together with the Hittite $-eššar / -ešn\text{-}$ type ($ḫanneššar / ḫannešn\text{-}$ 'judgment', $ḫalkuēššar / ḫalkuešn\text{-}$ 'first fruits') – if they jointly continue a single PIE type, would seem to point most directly to an amphikinetic paradigm with nom.-acc. $-és\text{-}ōr$ / obl. $-s\text{-}n\text{-}$ / loc. $-s\text{-}én$. The Gmc. abstracts in $-isan\text{-}$ (e.g. OE $hlýsa$ 'sound, report, fame', Oic. $kalsi$ 'cold (weather)') probably result from an inner-Gmc. extension of $s\text{-}$ stems by $-an\text{-}$ (cf. Goth. $agis$ 'fright', OHG $egis\text{-}lih$ 'frightful' : OS, OHG $egiso$ 'fright'). But this means that one could at least look in the direction of analyzing the Hittite $-eššar / -ešn\text{-}$ stems as similar extensions within Hittite. This could leave the Gk. and Vedic $-sen(i)$ infinitives as $-en$ locatives (§ 50.3) to $s\text{-}$ stems rather than endingless and $-i$ locatives respectively to a $-s(e)r / -s(e)n\text{-}$ stem. For the use of the $-en$ locative as infinitive cf. Gk. $-ev$ and $-evai$. For the infinitival use of a locative made in particular from an $s\text{-}$ stem cf. L. *genus* : *genere* beside *geno* : *genere*.

⁶ A synchronic oblique (h_1) $esn\text{-}$ 'blood' (Hitt. $e\text{-}eš\text{-}n\text{-}$ = Ved. $asn\text{-}$) with early reduction of the cluster $-sh_2n\text{-}$ (Schindler, BSL 70, 6) is practically all that comes to mind under this heading.

'mouth' and, semantically less compelling, $iūš/iūš-n-$ (Skt. $yūṣh/yūṣh-n-$) 'soup', which may easily be doubted, the application of such models to oblique $śṛṣ-n-$ 'head' could only produce a nom.-acc. $śṛṣ$, as could well be borne out by the creation of AV $śṛṣ-akti-$ 'headache' on models like $doṣ-n-$: ŚB $dor-(bāhavāṇi)$ 'fore- and upper arm' or $ās-n-$: $ās-$ (RV $ā-daghnā-$ 'reaching to the mouth'),⁷ whence $śṛṣ-n-$: $śṛṣ-$ in this case.⁸ But then it would be unclear why a $*śṛṣ$ ($*śṛṣ$) of this sort should have been "normalized" to $śṛas$ ($śiras$) if $iūš$ and $daṇṣ$ did not become $*iūyas$ and $*dāyas$.⁹ Other, less obvious models would also lead to the wrong result ($ást(h)i$ / $asth-n-$ 'bone' etc. to $*śṛṣ(i)$ / $śṛṣ-n-$; $ásrk$ / $as-n-$ 'blood' and $yákr̥t$ / $yak-n-$ 'liver' etc. to $*śṛṣrk/t$ / $śṛṣ-n-$ and so on). Although a $k_2rēh_2/k_2h_2sn-$ is certainly what lies immediately behind the Greek paradigm of 'head', it would seem that projecting this back to PIE as such only causes difficulties. It can neither be accounted for itself, nor can it be reconciled with the Vedic paradigm.

53.1 To finish with the question of whether it is possible to reconstruct either the Greek or the Vedic paradigm for neuter 'head' (cf. § 51.2), it only remains to see how successfully one might take Greek $k_2rēh_2$ as the replacement of k_2h_2os . As might be expected from the outset (cf. § 52.1), this proves to be unsatisfactory. For in that case, one would suppose that there was a $k_2h_2-(o)s/k_2h_2-es-$ from the beginning and that its oblique was expanded by $-n-$ in the usual way ($asth-n-$, $ās-n-$ etc.), whence the oblique k_2h_2-s-n- in both Skt. and Greek (and its masculine counterpart in Germanic).

But it is virtually impossible to produce a plausible account of how a relatively normal neuter $n-a$ $*κάρος$ in Greek¹⁰ would have been

⁷ Cf. W-D, 2.1, 57 f. It is admittedly not entirely clear that oblique $doṣ-n-$ beside first compound member $doṣ-$ could itself have been a model for oblique $śṛṣ-n-$: first member $śṛṣ-$. Since $doṣ-$ as a first member is not found before ŚB and $dóh/doṣ-n-$ itself is found as a simple s -stem $dóh/doṣ-$ in VS and MS, it could be that the first member $doṣ-$ already represents the new s -stem in compound, and therefore cannot be counted on to have existed in time to have served as a model for AV $śṛṣ-$.

⁸ But if it should emerge that there was an s -stem k_2h_2-es- of PIE date (§ 57), it would be perfectly possible to assume a completely reduced k_2h_2-s- inherited as a first compound member 'head' (cf. § 24.5).

⁹ Insofar as $dóh$ is partly neuter.

¹⁰ It is very doubtful that such an s -stem is indicated in any way by $HDeM$ $ἐκατὸν κάρα$ (§ 49.10). Among other objections, neither is it plausible that Gk. had a sg. $*κάρος$: pl. $κάραα$ nor that it had a sg. $*κάρας$: pl. $κάραα$ (as if $< k_2h_2-s$: $k_2h_2-s-h_2$ —§§ 41.2 ff.).

replaced by something as unusual as the neuter $\kappa\acute{\alpha}\rho\tilde{\alpha}$ found there (no matter what the analysis), with no effect on the form of the oblique. Such a hypothesis would also leave no obvious place in the overall scheme of things for the correspondence of $\kappa\acute{\alpha}\rho\tilde{\alpha}$ to Hitt. *-kar* etc. (IIb §§ 17 ff.).

53.2 One would therefore be thrown back upon an *ad hoc* compromise theory such as a PIE situation in which both $\hat{k}r\hat{e}h_2/\hat{k}r\hat{h}_2-$ 'skull, head' and its own derivative $\hat{k}r\hat{h}_2(o)s/\hat{k}r\hat{h}_2es-$ 'head' were both present side by side. This would be followed, still in the protolanguage, by the addition of *-n-* to the oblique stem of the *s*-stem derivative only, leading to $\hat{k}r\hat{h}_2os/\hat{k}r\hat{h}_2s + n-$ (still beside $\hat{k}r\hat{e}h_2/\hat{k}r\hat{h}_2-$). In I-Ir., this series of hypotheses would continue, the *-os/-s + n-* paradigm was simply retained, and the $(\tilde{e})h_2$ -stem, after yielding the derivative $\hat{k}r\hat{e}h_2-\dot{\imath}o-$ (*śrāya-* § 28.2), was eliminated. But then one would have to say that Greek selected the nom.-acc. from the $(\tilde{e})h_2$ -stem and the oblique from its derivative *-os/-s + n-* stem and constituted a paradigm from them. This is highly artificial, since no single step in the process is supported by anything in particular, and it still requires, in effect, the replacement of *n-a* $*\kappa\acute{\alpha}\rho\omicron\varsigma$ by $\kappa\acute{\alpha}\rho\tilde{\alpha}$. It cannot be taken very seriously.

54.1 As long as $\hat{k}r\hat{h}_2sn-$ as the oblique stem of neuter 'head' is held constant, only three possibilities for the corresponding nom.-acc. come to mind. It would now appear that neither $\hat{k}r\hat{h}_2s\gamma$ (§§ 51.3 and §§ 60 ff.) nor $\hat{k}r\hat{e}h_2$ (§ 52) nor $\hat{k}r\hat{h}_2os$ (§ 53) can be maintained without difficulty as the nom.-acc. that corresponded to this oblique in PIE. In other words, no combination of one of these with $\hat{k}r\hat{h}_2sn-$ in a reconstructed paradigm leaves room for explaining both the Greek and the Vedic facts, and one of them—namely $\hat{k}r\hat{h}_2s\gamma$ —would make it difficult to explain either one. One thing that is immediately clear is that no fourth possibility seems available.

If therefore, all three combinations fail to produce a paradigm that can serve as the basis of an overall solution, it is perhaps time to question the one feature that they all have in common: the attribution to PIE of the oblique $\hat{k}r\hat{h}_2sn-$ itself. The question then becomes whether the exact correspondence of $\hat{s}ir\hat{s}(a)n-$ to $\kappa\rho\tilde{\alpha}\alpha\tau-$ (and the closely related Gmc. *hersan-*) could result from early and parallel but essentially independent developments.

54.2 As soon as this possibility is opened, it begins to present certain advantages. A point that has already been touched upon (§ 51.3

no.3) is that one very desirable ingredient of a satisfactory interpretation of $\acute{k}y\text{-}h_2\text{-}sn\text{-}$ would be that it allow comparison of this oblique with items such as (cf. § 19.2):

Skt. $akṣ + n\text{-}$ 'eye', $asth + n\text{-}$ 'bone', $ās + n\text{-}$ 'mouth', $doṣ + n\text{-}$ 'fore-arm'

Gk. $\gamma\omicron\nu\text{-}\alpha\tau\text{-}$ 'knee', $\omicron\upsilon\text{-}\alpha\tau\text{-}$ 'ear'

Arm. $ak\text{-}n$ 'eye', $u\text{-}n(kn)$ 'ear'

Gmc. $aus\text{-}an\text{-}$ 'ear', $aug\text{-}an\text{-}$ 'eye', $hert\text{-}an\text{-}$ 'heart'

Specifically, a satisfactory solution would put Gk. $\kappa\alpha\rho\alpha\eta\text{-}v\text{-}/\kappa\rho\alpha\eta\text{-}v\text{-}/\kappa\rho\alpha\eta\text{-}\alpha\tau\text{-}$ in the same category as $\omicron\upsilon\text{-}\alpha\tau\text{-}$ and Skt. $\acute{s}irṣ\text{-}n\text{-}$ in the same category as $asth\text{-}n\text{-}$ etc. Since this amounts to an expansion of the oblique by $-n\text{-}$ rather than $-s(e)n\text{-}$, these apparent parallels would favor the reconstruction of the Skt. paradigm $\acute{s}ir\text{-}as/\acute{s}ir\text{-}\acute{s} + n\text{-}$ if only this led to some possibility of explaining the Greek one.

However this may be, it would certainly seem that emphasizing the similarity of $\acute{k}y\text{-}h_2\text{-}s + n\text{-}$ to $asth + n\text{-}$, $\omicron\upsilon\text{-}\alpha\tau\text{-}$ etc., as above, gives every reason to view $\acute{s}irṣ + n\text{-}$ and $\kappa\alpha\rho\alpha\eta + v\text{-}/\kappa\rho\alpha\eta + v\text{-}(\kappa\rho\alpha\eta\text{-}\alpha\tau\text{-})$ as essentially independent of one another:

1) The process of creating neuter obliques in $-n\text{-}$ is one that continued well into the respective histories (even the documented histories) of the individual languages. In the RV itself, for example, inst. $\bar{a}s\text{-}n\text{-}\acute{a}$ is only an alternative to $\bar{a}s\text{-}\acute{a}$, made on the $s\text{-}$ stem that corresponds to L. os and Irish \acute{a} (genitive) 'mouth'.¹¹ Moreover, the Gathic inst. $\bar{a}d\bar{a}yha$ corresponds exactly to the Vedic $n\text{-}$ less oblique (cf. also Av. gen. $\bar{a}yho = RV \bar{a}s\text{-}\acute{a}s$ ¹²). In this case, the $-n\text{-}$ oblique is still in the process of ousting original $\bar{a}s\text{-}$ in Vedic. In Greek, the same point is made perfectly clear simply by the co-existence of $\gamma\omicron\upsilon\nu\alpha$ and $\gamma\omicron\upsilon\nu\alpha\tau\alpha$ in Homer. But although it is obvious that $\gamma\omicron\upsilon\nu\text{-}\alpha\tau\text{-}$ is still a recent creation, there is no real reason for seeing it as the result of a process that is altogether distinct from the one which produced $\omicron\upsilon\text{-}\alpha\tau\text{-}$ 'ear' and, we might suggest, $\kappa\rho\alpha\eta\text{-}\alpha\tau\text{-}$. It would certainly seem that $\gamma\omicron\upsilon\nu\text{-}\alpha\tau\text{-}$ is later than the other two, but this need only mean that the process of $-v\text{-}/-\alpha\tau\text{-}$ expansion of neuter obliques was still going on in the earliest documented Greek.

2) Many sets of forms that constitute prime examples of the phenomenon show considerable differences of detail among themselves. Gmc. $angan\text{-}$ 'eye' and Arm. akn , though far from identical, could both

¹¹ Cf. Vendryes *Lexique*, A-4.

¹² Cf. Kellens *Noms-racines*, 339 ff.

be made to conform to a PIE $h_3ek^u + n\text{-}$ if this were desirable. But RV $akṣṇ\text{-}$ (especially in view of OCS *oko*) would have to be considered an independent instance of $n\text{-}$ expansion in the oblique no matter what.

3) Given the likelihood that certain neuter obliques were expanded with $n\text{-}$ independently, we would also hesitate to reconstruct, for example, a stem $h_2e/ost\text{-}n\text{-}$ for 'bone' based on RV *asthn-*, Celtic *astn-* (OIr. *asna* 'rib' < *astnio-*, W. *eis* 'the ribs' < *astōn*), and Gk. ὀστακός / ἄστακός 'lobster' (as if $h_2e/ost\text{-}n\text{-}ko\text{-}$). For Avestan¹³ g. sg. *astō*, g. pl. *astam*, and inst. pl. *azdabiš* (beside acc. sg. *as-ča* and nom. pl. *asti*) make it difficult to reconstruct oblique *ast-n-*, of which there is no sure trace in Avestan,¹⁴ even for Indo-Iranian. For our purposes, the question is whether $\hat{k}r\text{-}h_2sn\text{-}$ 'head' is really more secure than this $h_2e/ostn\text{-}$ 'bone'. More generally, such considerations might lead us to ask not whether these $n\text{-}$ expanded obliques are inherited, but only what was the PIE starting point that could have led to these parallel innovations with so much consistency.

54.3 As for the exact process by which a neuter body-part term, with a stem X , became an $X + n\text{-}$ stem in the oblique, the only possibilities would appear to be 1) the addition of $n\text{-}$ to whatever stem had been functioning (and continued to function) as nom.-acc. and 2) the addition of $n\text{-}$ to the stem that had been functioning as the oblique stem, but which now began to be replaced by the new stem in $n\text{-}$.

For the overall model, hardly anything could have been available (either in PIE or very early on in the relevant individual languages) but the original heteroclitics in r/n and l/n . But it is not exactly clear how these could have been analyzed in such a way as to give rise directly to either of the synchronic procedures described above:

1) Oblique $\hat{i}ek^u\text{-}n\text{-}$ 'liver' or $sn(e)h_1\text{-}u\text{-}en\text{-}$ ¹⁵ 'sinew', e.g., would certainly not seem to be derived by suffixation of $-(e)n\text{-}$ to their respective nom.-accusatives $\hat{i}\tilde{e}k^u\text{-}r$ and $sneh_1\text{-}u\tilde{r}$.

2) On the other hand, it is far from certain that these obliques were liable to be analyzed as formed by the addition of a suffixal

¹³ Cf. Kellens *Noms-racines*, 336 ff.

¹⁴ The analysis *astan-ta-* 'provided with bones' for the adjective presupposed by *astāntāt-* 'corporeality' has absolutely no advantage over *ast-anta-*, to which could be compared *xruu-anta-* 'grisly' = L. *cruentus* (Kellens *Noms-racines*, 379 note 4).

¹⁵ Cf. Schindler, *BSL* 70, 5 ff., 9 f. for the reconstruction of these particular oblique stem shapes.

-(e)n- to a simpler stem that could also be used as an oblique. This is especially unlikely for a primary *r/n* formation like $\hat{j}ek^{\#}-n-$. Not only is there no evidence of a root noun beside the heteroclite in this particular case, but it is in general extremely rare that a single root will provide both a root noun and an *r/n*-stem¹⁶ with anything like the same meanings.¹⁷

Such an analysis is more possible, in theory, for the oblique in a formation like $sn(e)h_1-\mu en-$, at least in that complex *r/n* formants (-C + *r/n*-) are sometimes segmentable from a historical point of view:

h_2erh_3-u- (L. *arua* 'fields') : $h_2erh_3-\mu r/-en-$ (Ir. *arbor/arbae* 'grain'
cf. Gk. ἄρουρα 'land, field' and Arm. *harawownk* 'fields') [*]

In the case of 'sinew', the Avestan material adjective *snāuuia-* 'made of sinew' could point, directly or indirectly, to a $snā\mu-$ beside $snāuuarə$ in similar fashion. But at any given stage, -u- beside - $\mu en-$ etc. must have been enough of a rarity that such hypothetical pairs cannot be considered satisfactory as the model on which the obliques in question here (*asth-n-*, *ovh-ατ-* etc.) were all made. In addition, -u- vs. - $\mu r/-\mu en-$ might lead one to expect nom.-accusatives in - μr (**a/ost-μr* 'bone', **ōs-μr* 'mouth', **aus(s)-μr* 'ear' etc.), and these are hardly ever found.

54.4 A purely descriptive statement of the process by which there were produced neuter obliques like $ok^{\#}-n-$ 'eye' etc. is nevertheless perfectly possible: a) In this series of terms, -n- was simply made the last item before the oblique case endings. b) This was done regardless of what the nom.-acc. looked like and regardless of what relationship between nom.-acc. and oblique would thereby result. One might almost

¹⁶ The only sure case I know of is that of 'water', for which there is both the wide-spread *r/n*-stem (Hitt. *uatar*, Gk. ὕδωρ etc.) and a root noun appearing as such in Hittite (dat.-loc. *uīti*, abl. *uītaš*) and which seems to have served as the basis for a thematic *vṛddhi* derivative *uēd-o-* > N, W Gmc. *wāta-* > OIc. *vátr*, OE *wæt* 'wet'. If ὕδρι (Hes.; Theogn. 961, West IEG) really reflects *úd-eh-i* and thus guarantees a neuter *s*-stem *údos*, this too would best be taken as a secondary formation (§ 41.3) and could point to a root noun *uēd-/ud-*. If, on the other hand, ὕδρι is itself an old root noun dative (with the original ending) preserved as an adverb (it has the same instrumental function in both Hesiod and Theognis), it would only be necessary to assume that the accent has been rearranged (*ὕδρι → ὕδρι) – at least in the transmission – as a consequence of a re-analysis that would also account for eventual nom.-acc. ὕδρις in Callimachus. In that case, Greek would present direct evidence of the root noun.

¹⁷ More typical is (h_3)*rēg-* (agent: L. *rex*/OIc. *rí* 'king') vs. (h_3)*rēg-μr/n-* (vbl. abstract: Gath. *rāzar/n-* 'directive'/RV *rājāni* (10.49.4) 'under the rule'? cf. W-D 2.2, 178; 3.74, 271, 313).

say that *-n-* was prefixed to all the oblique case endings. To take the *r/n* stems as the model for this kind of process, it might be supposed that they were analyzed as having a nom.-acc. unrelated (and irrelevant) to the oblique (b) and an oblique that always showed *-n-* before the ending (a). Finally, it may be important to note that oblique forms with and without this *-n-* could apparently co-exist, at least for a while (RV $\acute{a}s-\acute{a} / \acute{a}s-n-\acute{a}$, Hom. γόνϜ-α / γόνϜ-ατ-α).

55. Returning to the question of oblique $\hat{k}r\acute{h}_2sn-$ with this orientation (§ 54) in mind, the additional problem that arises is that the paradigm of ‘head’ presents not simply *X* beside *X + n* ($h_2e/ost / h_2e/ost-n$ -e.g.) but *X* (κάρα etc., Hitt. *-kar*) beside *X + s* ($\acute{s}iras-$, *sarah-*) beside *X + s + n* (κρᾶ-h-v- = $\acute{s}ir-s-n$ - cf. Gmc. *her-z-an-*). This situation, up to a point, is also found in the case of ‘eye’:

- $h_3\acute{e}k^{\#}$: Gk. ὤπ-α, dual $h_3(e)k^{\#}-iH$ (ὄσσ(ε), Arm. $a\check{c}(k^{\#})$, OCS $o\check{c}i$, Lith. aki); root noun presupposed by compounds in several branches (RV *pratyak-/pratīc-* ‘turned toward’ etc.; Gk. (γλαυκ- etc.) ὠψ, (αἰθ- etc.) οψ; L. (*fer-* etc.) *ox* and others.
 $h_3ek^{\#}-(e)s-$: OCS etc. *oko/očese*, RV dual $ak\acute{s}-\acute{t}i^{18}$ etc.
 $h_3ek^{\#}-s-(e)n-$: Skt. only in the oblique $ak\acute{s}(a)n-$ ¹⁹

¹⁸ The accent of $ak\acute{s}-\acute{t}$ (: sg. $\acute{a}k\acute{s}i$) makes it appear to be a C-stem dual—at least in origin—rather than an *i*-stem (W-D 3, 304). The Vedic dual forms outside the nom.-acc. (RV+ inst.-dat.-abl. $ak\acute{s}ibhy\acute{a}m$, AV+ gen.-loc. $ak\acute{s}y\acute{o}h$, VS $ak\acute{s}y\acute{o}h$) show only that the dual paradigm was redone on the basis of a re-analysis of $ak\acute{s}-\acute{t}$ as a *devī-* and/or *vṛkī-* type dual (W-D 3, 303f.), whence eventually even AV+ nom.-acc. dual $ak\acute{s}y\acute{a}u$. As will be noted momentarily, this favors a consonant-stem dual in $ak\acute{s}-\acute{t}$ too.

For the Avestan dual nom.-acc. $a\acute{s}i$ / inst. $a\acute{s}ibi\acute{a}$, together with the bahuvrihi (acc.) $x\acute{s}uua\acute{s}.a\acute{s}im$ ‘six-eyed’ (cf. Kellens *Noms-racines*, 369), there are a number of theoretical possibilities, but certainly the simplest view of these three forms would be that $a\acute{s}i$ is a consonant-stem dual exactly equivalent to Ved. $ak\acute{s}-\acute{t}$ (except that the stem has been remade from $*ax\acute{s}-$ to $a\acute{s}-$ in Avestan as an assimilation to $u\acute{s}-i$ ‘ears’) and that $a\acute{s}ibi\acute{a}$, like Ved. $ak\acute{s}ibhy\acute{a}m$, represents an analogical \bar{i} -stem form that took the ambiguous nom.-acc. in $-\bar{i}$ as its point of departure (Av. $u\acute{s}i / u\acute{s}ibi\acute{a}$ ‘ears’ could be a descriptive \bar{i} -stem of the same type and origin). In that case, the compound $x\acute{s}uua\acute{s}.a\acute{s}i-$ would simply have the synchronic \bar{i} -stem of $a\acute{s}i / a\acute{s}ibi\acute{a}$ as its second member (a compositional formation that would have been considerably facilitated by the fact that it was not a femininizing $-\bar{i}$ in this case; and even a femininizing \bar{i} -stem appears in a bahuvrihi used as a masc. adjective: $ham-n\acute{a}ir\bar{i}$ - V.5.27).

If both Vedic and Avestan have a necessarily secondary \bar{i} -stem dual paradigm, it will have replaced either an *i*-stem paradigm or a consonant-stem paradigm (in either case on the basis of the ambiguous nom.-acc. in $-\bar{i}$). As already noted, the accent of $ak\acute{s}\acute{t}$ itself disfavors the view that it was originally the dual of an *i*-stem (or at least that it was the dual of an *i*-stem $\acute{a}k\acute{s}i$ in particular). But in addition, it would be difficult to

explain why a clear and viable *i*-stem pair like $\acute{a}k\acute{s}i / * \acute{a}k\acute{s}ibhy\bar{a}m$ (or its I-Ir predecessor) should have been replaced by an analogical \bar{i} -stem set, and one might therefore suspect that it was the difficult-to-analyze outcome of a *C*-stem inst.-dat.-abl. dual that provoked the remaking of the paradigm.

But if $\acute{a}k\acute{s}i$ is not the dual of the *i*-stem ($\acute{a}k\acute{s}i$) that turns up as the corresponding singular in Vedic, then that singular (unless it were to be viewed as a genuinely old *i*-stem that simply happens not to be the basis of the dual) is presumably a relatively new one that has replaced a consonant stem. This view of $\acute{a}k\acute{s}i$ is consistent with two further observations:

1) $\acute{a}k\acute{s}i$ itself occurs only once in RV (vs. 7 forms of the $\acute{a}k\acute{s}i$ -stem dual and 10 oblique sg. and plural forms made on the stem $\acute{a}k\acute{s}(a)n-$), and is indirectly attested in RV only by adverbial $\acute{a}k\acute{s}i-p\acute{a}t$ (2x).

2) the consonant stem $\acute{a}k\acute{s}-$ is still to be found in the RVedic bahuvrihis $an-\acute{a}k(s)$ 'blind' and $an-, catur-, hiraṇya-\acute{a}k\acute{s}-a-$ etc. (W-D 2.1, 108; 3, 304).

The precise channel through which singular $\acute{a}k\acute{s}i$ was created (presumably as a replacement of a consonant stem) need not concern us at the moment.

A second point that ought to be touched on is the question of the more precise analysis of the consonant-stem seen in Ved. $\acute{a}k\acute{s}-$ (and indirectly in Av. $a\acute{s}(i)$ as well, to all appearances). It has been interpreted as an *s*-stem here because this offers the advantage (over the alternative to be mentioned in a moment) of a coherent set of forms that lends itself to a straightforward explanation with virtually no gaps in the requisite data— $ok\acute{s}-(e)s-$ (OCS oko , Ved. $\acute{a}k\acute{s}-$) : $\acute{o}k\acute{s}-$ (OCS $o\acute{o}$, L. $-ox$ etc.) = $a\mu s-es-$ 'ear' (OCS $ucho$, OIr. $\acute{a}u$) : $(a)us-$ (Av. $u\acute{s}$, OCS $u\acute{s}$ etc.)—and cf. §§ 57.6 ff.

The stem $\acute{a}k\acute{s}-$ has also been reconstructed (e.g. Pokorny *IEW*, 775 f.) as $ok\acute{s}P-$ ($h_3ek\acute{s}P-$) and compared to Gk. $\acute{o}p\theta\alpha\lambda\mu\acute{o}s$, $\acute{o}k\tau\alpha\lambda\lambda\acute{o}s$ (Boe.), $\acute{o}p\tau\acute{\iota}\lambda\acute{o}s$ (Dor.). In comparison to the *s*-stem analysis of $\acute{a}k\acute{s}-$, this one is rather up in the air. In the first place, it arbitrarily dispenses with a perfect potential equation of $\acute{a}k\acute{s}-$ with the Slavic *s*-stem and, more importantly, fails to replace it with a real equation of any kind. In addition, this reconstruction for the Greek forms involves implicit auxiliary hypotheses which are not supported by anything positive and does not take account (at least explicit account) of parallel-looking formations in Greek itself.

If we start, on the one hand, from the premise (see Schindler, *Die Sprache* 13, 191 ff.; *Die Sprache* 23, 25 ff.) that "thorn clusters" come from earlier clusters of tautosyllabic velar plus dental or vice versa, then Ved. $\acute{a}k\acute{s}-$ would reflect a neuter *t*-stem ($h_3ek\acute{s}t-$), either primary (parallel to the root noun) or derived from the root noun, and old enough to have undergone the PIE special phonological treatment in question. Such an item would be poorly paralleled, if at all (since it is doubtful that nom.-accusatives like Ved. $y\acute{a}k\acute{s}t-$ etc. were PIE, especially for non-*r/(n)*-stems, and PIE *melit* 'honey' is unclear in its derivational history).

For the Greek material, one at least gains the impression that the formation of the three relevant words for 'eye' (or at the very least the last step(s) in their formation) occurred in Greek itself (and even in the dialectal stages). For $\acute{o}k\tau\alpha\lambda\lambda\acute{o}s$ and $\acute{o}p\tau\acute{\iota}\lambda\acute{o}s$, the morphological parallels, such as they are, point specifically to denominative origin. To $\acute{o}k\tau\alpha\lambda\lambda\acute{o}s$ cf. $\alpha\acute{\iota}\gamma\acute{\iota}\theta\alpha\lambda\lambda\acute{o}s$ 'parus' (: $\alpha\acute{\iota}\gamma\acute{\iota}\theta\acute{o}s$ 'linnet(?)'), $\kappa\omicron\rho\upsilon\delta\alpha\lambda\lambda\acute{o}s$ 'crested lark' (: $\kappa\omicron\rho\upsilon\delta\acute{o}s$ 'crested lark'), $\kappa\acute{\rho}\upsilon\sigma\tau\alpha\lambda\lambda\acute{o}s$ 'ice' (: L. *crusta* 'hard surface-layer'), $\kappa\acute{\nu}\epsilon\phi\alpha\lambda\lambda\acute{o}\nu$ / $\kappa\acute{\nu}\alpha\phi\alpha\lambda\lambda\acute{o}\nu$ 'woolen flock' (: $\kappa\acute{\nu}\alpha\phi\acute{o}s$ 'carding comb').

For $\acute{o}p\tau\acute{\iota}\lambda\acute{o}s$, the forms that look most directly comparable are the diminutives of the type $\kappa\omicron\nu\tau\acute{\iota}\lambda\acute{o}s$ 'penis' (: $\kappa\omicron\nu\tau\acute{o}s$ 'pole') and the nicknames $\Theta\upsilon\mu\acute{\iota}\lambda\acute{o}s$ (: $\theta\upsilon\mu\acute{o}s$) and

Σοφίλος (: σοφός). Closely related is ναυτίλος 'nautilus mollusk; sailor; naval' (: ναύτης). Though the bird-name τροχίλος 'plover, wren' might appear to have been derived in parallel fashion from τροχός 'running, hurrying' (Pi.), it might well have been modelled on σποργίλος 'sparrow', which bears at least a vague resemblance to OPr. *spurglis*, and may therefore not be an -ίλο- formation of the presumably purely inner-Greek type(s) represented by κοντίλος etc. above (Το τροχίλος, in turn, cf. the bird-names κορθίλος, ὀρχίλος, φρυγίλος).

In any case, it would seem reasonable to class ὄκταλλος and ὀπτίλος with αἰγίθαλλος etc. and κοντίλος etc. respectively as "familiar", diminutive-like denominative derivatives. And if so, they are hardly likely to be items of any great age. This being the case, it would be especially unconvincing to insist that these dialect forms for 'eye' must ultimately be derived from something as remote as a hypothetical formation ($h_3 e k^h -t-$ as above?) with tautosyllabic $k^h t$ simply for the sake of having a thorn cluster in these words. Surely it would be more plausible to suppose that the ὀπτ- of ὀπτίλος is more or less comparable to that of the large number of deverbative formations made to ὀπωπα etc. in Greek (-οπτος, -όπτis, (-)οπτεύω, (-)οπτήρ, (-)οπτικός: Frisk *GEW* 2, 407; Chantraine *DELG*, 811), all of which reflect a heterosyllabic $k^h t$ which is furthermore of post-PIE origin in the majority of the cases. ὄκταλλος may be classed among the cases (e.g. Schwyzler *GG* 1, 299) in which a labio-velar (before *s* and *t* in particular) is continued by a velar.

As for ὀφθαλμός, a comparison with formations like ἰνδαλμός (Hp.) '(misleading) appearance', σχινδαλμός / οκινδαλμός (Hp+) 'splinter' is practically inevitable. Since ἰνδαλμός is a verbal abstract to ἰνδάλλομαι 'appear, seem', one could further compare σκαλμός 'oar-peg' : σκάλλω 'dig up' (on the semantics Frisk *GEW* 2, 716), ψαλμός 'a plucking' etc.: ψάλλω 'pluck', and, more generally, καθαρός 'purification' : καθαίρω 'cleanse', παταμός 'sneezing' : παταίρω 'sneeze', ἀγερός 'collection, levy' : ἀγείρω 'gather', οἰκτιρμός 'pity' : οἰκτίρω 'have pity (on)', ὀδυρμός 'lamentation' : ὀδύρομαι 'mourn, lament' etc. If ὀφθαλμός is judged by ἰνδαλμός, and ἰνδαλμός by its own further parallels, it follows that ὀφθαλμός is in origin a verbal noun meaning 'sight' that has come to mean 'eye'. This semantic development is exactly paralleled by ὄμμα 'eye' (< $o k^h -m h$, presumably 'sight') and by ὄψis, which can mean (in addition to 'appearance') both 'power of seeing, vision' and 'eye'.

A deverbative ὀφθαλμός will have been derived, in all probability, either from an *ὀφθαλλο/ε- (cf. ἰνδαλμός : ἰνδάλλομαι etc. above) or from an *ὀφθαλο/ε- (cf. κευθμός : κεύθω, ἀρδμός : ἄρδω, βρυγμός : βρύω etc.). An *ὀφθαλλο/ε- (-*jo/e*-present) is more likely, however, since the *ὀφθαλ- itself may probably be taken to show that the verb in question (that gave rise to ὀφθαλμός) was denominative. A simple and attractive further possibility is that of conjecturing that *ὀφθαλλο/ε- 'see', the most probable basis of ὀφθαλμός, was itself derived from (what would eventually have come out as) an *ὀφθλο-, a *nomen instrumenti* (as if) from $h_3 e k^h -dhlo-$ 'eye'. Formally, one might compare to ὀφθλο- : ὀφθαλλο- the pairs ἐχθρός 'hateful' : ἐχθαίρω 'hate', ἐλαφρός 'light' : ἐλεφαίρομαι 'make light of, belittle, make a fool of, cheat'. If there actually was a PIE $h_3 e k^h -dhlo-$ with a tautosyllabic $k^h dh$, then ὀφθαλμός could ultimately show the reflex of a thorn cluster, but not one that could also be reflected in Ved. *akṣ-*.

¹⁹ Ep., class. *kṣana-* (m/n) 'instant' and U., ep., class. *abhikṣṇam* 'repeatedly' (lex. *abhikṣṇa-*), if they mean anything at all, may either have something direct to do with *akṣ(a)ṇ-* (quasi $h_3 e k^h s-(e)n-$: $h_3 e k^h s-(e)n-$) or point only to an -en locative (§ 50.3)

In purely descriptive terms,²⁰ the word for 'ear' could exhibit the same pattern:

$h_2e\hat{u}s-/h_2us-$: Av. dual $u\check{s}-i$ (h_2us-iH), OCS $u\check{s}i$ ($h_2e\hat{u}s-iH$), Lith. g. pl. $aus\check{u}$; L. $auris$;²¹ compounds like Gk. $\pi\alpha\rho\eta\acute{\iota}\omicron\nu$ 'cheek' (< $par-a\hat{u}s-i\check{o}-$) etc., Ir. $arae$ 'temple' ($par-a\hat{u}s-io-$), L. $aus-cul-tare$

$h_2(e)\hat{u}s-es-$: Gk. $o\check{u}\varsigma$ etc. (< $o\hat{u}s-os$ ²² cf. Myc. $a-no-we$ etc. < $-o\hat{u}s-\check{e}s$ § 26.13), Ir. $\acute{a}u$ /pl. $\acute{a}u(a)e$ (< $a\hat{u}s-os/a\hat{u}s-es-a$), OCS $ucho/u\check{s}ese$

$h_2(e)\hat{u}s-(s)-(e)n-$: Gk. $o\check{u}-\alpha\tau-$, Arm. $u-n-(kn)$, Gmc. $aus-an-$ (Goth. $aus\bar{o}$ etc.)

Neither 'eye' nor 'ear', however, presents the difficult situation encountered with 'head'. It is only in the case of $\hat{k}r(e)h_2-(s)-(n)-$ that we actually find a language (namely Greek) that combines X and $X+s+n$ into a paradigm. With the others, the paradigm, even if heteroclitic, shows at most an alternation between X and $X+s$ (e.g. Slavic $ok^{\#}-/ok^{\#}-es-$, $a\hat{u}s-/a\hat{u}s-es-$) or $X+s$ and $X+s+n$ (e.g. Skt. $ok^{\#}-s-/ok^{\#}-s-n-$, Gk. $o\hat{u}s-es-/ous-(s)-n-$). What is required, therefore, is an overall solution that can lead to an explanation of the (virtually unique) Greek $X/X+s+n$ paradigm while making the $-n-$ of $\hat{k}r\hat{h}_2sn-$ basically comparable to that of $h_2e/ostn-$ 'bone' etc. (§ 54.2)—i.e. a late addition to the oblique stem made independently by the languages that show it. It goes without saying that an acceptable solution will also have to account for the Vedic paradigm, but this would not present any real difficulty were it not for the Greek correspondent.

56. To recapitulate quickly, it seems likely that the very earliest PIE paradigm of 'head' was a hysterokinetic $-(e)h_2-$ stem (§§ 36 ff.). But the Greek paradigm does not continue this directly, and the Sanskrit still less (§§ 48 ff.). The question then becomes that of arriving at the best account of the further developments that have led to the para-

made to the s -stem seen in dual $ak\check{s}-\acute{e}$ etc. (as if $h_3k^{\#}s-en$) and then probably not directly identifiable with $ak\check{s}(a)\eta-$ (§ 58.4).

²⁰ Descriptively because the forms in apparent $h_2e\hat{u}s-/h_2us-$ are in the very last analysis the outcome of $h_2e\hat{u}s-s-/h_2us-s-$ (§ 57.6).

²¹ Latin *auris* may be put here under the theory (e.g. Ernout-Meillet *DELL*, 59) that *auris/auris* is a direct rearrangement of the s -stem dual and comparable in that respect to Lith. *ausis*.

²² On the root vocalism of the Greek form see now Peters *Untersuchungen*, 59, but with reference to Szemerényi, *SMEA* 3, 47 ff.

digms that are actually found in those languages. This amounts to determining what could best be reconstructed (for PIE and/or the individual languages) as the mid-stage(s) between the most original inflection and the ultimate outcomes. All the most obvious possibilities have been considered and rejected (§§ 51–53), and in particular these considerations have led to the recognition of the possibility that oblique $\hat{k}r\acute{h}_2sn-$ was not necessarily there yet in PIE (§ 54). Furthermore, there is some support in any case for this general orientation toward the stem $\hat{k}r\acute{h}_2sn-$ (§ 54.2). Finally, it appears that the problematical three-way stem alternation ($\hat{k}r\acute{e}h_2 / \hat{k}r\acute{h}_2-es- / \hat{k}r\acute{h}_2-s-n-$) in the word for ‘head’ has clear parallels only in the words for ‘eye’ and ‘ear’ (§ 55), and it has emerged that the nub of the problem is that Greek has $\hat{k}r\acute{e}h_2$ and $\hat{k}r\acute{h}_2sn-$ without any reliable trace of the $\hat{k}r\acute{h}_2es-$ paradigm that would seem at first glance to be a prerequisite for $\hat{k}r\acute{h}_2sn^{-23}$ (§ 55).

57.1 At this point, nothing remains but to approach the Greek and Vedic paradigms once again, but now without the unquestioned assumption that PIE always had an oblique $\hat{k}r\acute{h}_2sn-$, and therefore without any objection to the opposite view if this turns out to provide a solution. This approach has the immediate advantage of offering maximum comparability between $\hat{k}r\acute{h}_2sn-$ and the other neuter obliques ($h_2e/ostn-$ etc.) from which it ought not to be too far dissociated. If in addition it leads to a possible account of the Greek paradigm and a reconciliation of this with the Skt. situation, it will have to be considered superior to the reconstruction of a PIE $\hat{k}r\acute{h}_2sn-$. And if it also offers a basis for the general morphological similarity displayed by the words for ‘head’, ‘eye’ and ‘ear’, this will also be a strong argument in its favor.

57.2 Strategically then, what is now to be emphasized is the parallelism between $\hat{k}r\acute{h}_2sn-$ and the h_2estn -type of oblique. It has already been suggested (§ 54.3, .4) that the process by which these were created may be described as the “prefixing” of $-n-$ to the oblique endings. This means at the same time that they are expansions of the original oblique rather than derivatives or expansions of the nom.-acc.:

h_2ost- ‘bone’	$h_2eus-(o)s$ ‘ear’
$h_2est- \rightarrow h_2est + n-$	$h_2(e)us-es- \rightarrow h_2(e)us-s + n-$

If Skt. $\acute{s}irah / \acute{s}ir\acute{s}n-$ is viewed as the result of precisely the same process, it would imply:

²³ One could dispense with the s -stem only if a $-s(e)n$ -oblique could be justified here (but cf. § 52.3).

$\hat{k}\bar{r}h_2-(o)s$ 'head'

$\hat{k}\bar{r}h_2-es- \rightarrow \hat{k}\bar{r}h_2-s + n-$

This is not very instructive, however, because aside from indicating that the addition of $-n-$ seems to have conditioned a reduction of $-es-$ to $-s-$ (§ 58.4 and cf. ok^u-es- vs. $ok^u-s + n$ -²⁴ 'eye', $h_2(e)\mu s-es-$ vs. $h_2(e)\mu s-s + n$ -²⁵ 'ear'), the only consequence is that the Skt. paradigm becomes most immediately a rearrangement of a neuter s -stem. This is obvious in any case, but provides no approach to the analysis of the Greek situation.

But if an attempt is made to view the Greek paradigm along exactly the same lines, then $\hat{k}\bar{r}\bar{e}h_2 / \hat{k}\bar{r}h_2sn-$ automatically becomes the result of:

$\hat{k}\bar{r}\bar{e}h_2$ 'head'

$\hat{k}\bar{r}h_2-es- \rightarrow \hat{k}\bar{r}h_2-s + n-$

57.3 Here, of course, it is the starting point that raises questions. But it is immediately apparent that if a nom.-acc. $\hat{k}\bar{r}\bar{e}h_2$ (the original form) beside an oblique (and oblique only) $\hat{k}\bar{r}h_2-es-$ could be accounted for, all the problems so far encountered (§§ 51 ff.) would disappear. The Greek paradigm would simply result from the development just sketched above. The same starting point would also provide the basis for a straightforward account of the Skt. correspondent. It would suggest that $\hat{k}\bar{r}\bar{e}h_2 / \hat{k}\bar{r}h_2-es-$ was remodelled to $\hat{k}\bar{r}h_2-os / \hat{k}\bar{r}h_2-es-$, a normal neuter s -stem. After that, oblique $\hat{k}\bar{r}h_2-es-$ would have been expanded to $\hat{k}\bar{r}h_2-s + n-$ in the usual way (cf. Skt. $ak-s + n-$ 'eye', $\bar{a}s + n-$ 'mouth' etc.). The derivative $\hat{k}\bar{r}\bar{e}h_2-io-$ seen in Indic $*\acute{s}r\bar{a}ya-$ (§ 28.2) can also be easily accommodated in such a scheme. Its formation would simply have preceded the analogical replacement of $\hat{k}\bar{r}\bar{e}h_2$ by $\hat{k}\bar{r}h_2-os$ in I-Ir.

57.4 A hypothesis of this sort would automatically meet most of the requirements (§§ 55, 57.1) for a satisfactory solution. It allows for explanations of both the Skt. and the more difficult Greek paradigms without calling for anything but trivial or well-paralleled innovations in either case. In addition, it requires only that oblique $\hat{k}\bar{r}h_2s + n-$ be of the same type as other obliques in the same group, and formed in the same way—by independent expansion of the pre-existing oblique. Beyond this, it remains to be seen whether this interpretation can throw any light on the morphological parallelisms shown by 'head', 'eye', and 'ear'.

²⁴ i.e. in Slavic (e.g. OCS *oko*) vs. Vedic (*akṣ(a)ṇ-*)—§ 55.

²⁵ i.e. in Irish (*áu*) vs. Greek (*οὐατ-*)—§ 55. Cf. also § 58.1.

57.5 But an evaluation is premature without some account of how $\hat{k}r\acute{e}h_2 / \hat{k}r\acute{h}_2-es-$ could have arisen. There is no sense in which it may be considered original. In general terms, there is no such thing as a *zero* / *-es-* heteroclitic “type” to be attributed to PIE. More specifically, there is even reason to suppose, in the case of the PIE word for ‘head’ itself, that the protolanguage simply had a hysterokinetic *-eh₂-*stem in the first instance (§§ 36.2 ff.). This necessarily means that if the indications gained from combining the Greek and Skt. paradigms point most easily to the strange-looking starting point now being considered, this starting point must have replaced the earlier $\hat{k}r\acute{e}h_2 / \hat{k}r\acute{h}_2-$, and must have arisen analogically in PIE. But then a model is required. It should be as closely related a model (semantics, gender, phonological shape) as possible, and it should present (or synchronically seem to present in PIE) a heteroclisy of the type *n-a X / obl. X + es-*.

At this point our attention is naturally drawn to the morphologically parallel words for ‘eye’ and ‘ear’. And it is not necessary to look any further. For the application of one securely assumable PIE phonological rule to the theoretically original paradigm of ‘ear’ would inevitably produce a paradigm that could only be synchronically interpreted as a case of *X / X + es-* “heteroclisy”.

57.6 The PIE word for ‘ear’, a neuter *s*-stem made on the root h_2eus- ,²⁶ would ideally have had the following inflection in pre-PIE in the relevant cases:

sg.: ²⁷	n-a.	$h_2\acute{e}us-s$	du.:	$h_2us-s-iH$
	dat.	$h_2us-\acute{e}s-ei$		
	loc.	$h_2us-\acute{e}s-(i)$		
	inst.	$h_2us-\acute{e}s-h_1$		

It is practically certain, however, that *-ss-* between vowels was simplified to *-s-* in PIE.²⁸ And if heterosyllabic *-ss-* (a cluster of only two consonants) received this treatment, it would seem likely *a fortiori* that the

²⁶ See Szemerényi, *SMEA* 3, 47 ff.; Schindler, *Flex und Wortbildung*, 259 ff., Peters *Untersuchungen*, 58 ff.

²⁷ Absolutely strictly speaking, the gen.-abl. should have been $h_2us-\acute{e}s-s$ in the very first instance. This could be expected to have become $h_2us-\acute{e}s$ very early (cf. further down in this §), and would thus have been entirely open to re-analysis as a root-noun gen.-abl., a development that would have further facilitated the train of events about to be reconstructed here.

²⁸ $\acute{e}s-si$ ‘you are’ > PIE $\acute{e}si$ (Ved. $\acute{ási}$ / Av. \acute{ahi} : Gk. $\epsilon\acute{\iota}$) is the standard example. For others (and cases of PIE $s < ss$ in other positions) cf. Brugmann *Grdr*², 1.2, 724 f., e.g.

sequence $-C\acute{s}\#$ with tautosyllabic $-ss$ in a cluster of three consonants would also end up with a single s ($-C\acute{s}\# > -Cs\#$).²⁹ In the present case, this means that the dual $h_2us-s-iH$ became PIE h_2usiH 'the two ears' (cf. Av. *uši* and, except for the root vocalism, OCS *uši*). But it is also likely that the n-a sg. $h_2e\acute{u}s-s$ became PIE $h_2e\acute{u}s$. The result of this development would have been a paradigm n-a $h_2e\acute{u}s$ / obl. $h_2us-és-$.

Furthermore, no analogical remedy for this irregular pattern could have been available until the neuter s -stems, as a class, replaced n-a $-s$ with $-os$ later on.³⁰ But it may be emphasized that even if some remedy had been available, it is far from clear that it would have been adopted. In the n-a dual, pre-PIE $h_2us-s-iH$ had become h_2usiH . The dual in the paradigm of this word is likely to have been influential,³¹ and a n-a dual h_2us-iH (synchronically a root noun dual) could only have tended to lend strong support to a n-a sg. $h_2e\acute{u}s$ (synchronic root noun). The result, therefore, had to be:

n-a X : sg. $h_2e\acute{u}s$ du. h_2us-iH
obl. $X + es$: $h_2us-es-$

Finally, we may note that the "regularization" of this paradigm through a development in the opposite direction (the elimination of $h_2us-es-$ in favor of $h_2e\acute{u}s-$ / h_2us-) would have been disfavored from the beginning, since it would have amounted to spreading a type of formation (neuter root noun) that was clearly moribund already in PIE. Neuter $-es$ -stems (of several derivational types), on the other hand, seem to have been very productive, and continued to be so in several of the later branches.

57.7 In any case, the developments leading from the PIE 'ear' paradigm to that of the individual languages are perfectly clear and need not be detailed here with any real completeness. The typical innovations are a) the replacement of monosyllabic $h_2e\acute{u}s$ in the n-a by $h_2e\acute{u}s-os$ (once the $-os$ allomorph had become available): thus Slavic *uch-o*

²⁹ The examples given by Brugmann (cf. previous note) for a general PIE reduction $-ss > -s$ at word-end are either not absolutely certain ($*m\acute{u}s-s > m\acute{u}s > L. mus / Gk. \mu\acute{u}\varsigma$) or else make the point only for one branch (Ved. *á-ghas* 'you ate').

³⁰ That this was at least relatively late (and therefore plausibly taken to have post-dated the $ss > s$ reduction) is suggested by the survival of s -stem nom.-accusatives of the structures $CerH-s$ and $CeyH-s$ into the individual languages (cf. Schindler, *Flex und Wortbildung*, 265 f. on the non-original character of $-os$ in PIE nom.-acc. neuter s -stems).

³¹ Cf. apparent $h_2e\acute{u}s-i-$ in Latin *auris* and Lith. *ausis*, each independently back-formed from the dual, to all appearances.

Irish *áu*, Gk. *oũh-oc; ³² b) the generalization of h_2eys- root vocalism (less frequently h_2us-) : Slavic dual *aμšĩ* (> OCS *uši*) and obl. *aμs-es-* (OCS *ušeše* etc. = Irish *au(a)e*); c) the back-formation of new (animate) singulars altogether from the dual (with new full grade root): Latin *auris* = Lith. *ausis*; d) *n*-expansion of the oblique $h_2(e)ys-es-$ to $h_2(e)ys-(s)-n-$: clearest in Gk. οὐατ-, indirectly there in Gmc. *ausan-*, Arm. *un(kn)*. For the Greek developments in particular, just as an example, one might easily assume that $h_2eys/h_2us-es-$ became *aμs-os/aμs-es-* (with root vocalism probably levelled in one direction or the other ³³ and with normalized nom.-acc.), and that this was followed by *ousos/ousses-* and *ousos/ous(s)n-*.³⁴ Finally, it seems that although the new analogical *n-a* in *-os* consistently appears in the simplex paradigm, the *aμs* that is descriptively identical to the outcome of the older *n-a* is well-enough represented (§ 55) that *aμs* need not be considered very old.

57.8 Returning now to $\hat{k}\hat{r}\hat{e}h_2 / \hat{k}\hat{r}h_2-$ ‘skull, head’, the following points may be recalled:

1) The reconstructions $\hat{k}\hat{r}h_2s\hat{r} / \hat{k}\hat{r}h_2sn-$, $\hat{k}\hat{r}\hat{e}h_2 / \hat{k}\hat{r}h_2sn-$, and $\hat{k}\hat{r}h_2os / \hat{k}\hat{r}h_2sn-$ for PIE itself all present insuperable obstacles to the explanation of the paradigms actually found either in Greek or in Vedic or both (§§ 51.3–53.2).

2) A PIE oblique $\hat{k}\hat{r}h_2sn-$, however, is neither absolutely necessary nor even very desirable (§ 54.2). The parallels suggest instead a $\hat{k}\hat{r}h_2-(e)s-$ oblique that has been expanded by *-n-*.

3) At the same time, the Gk. paradigm excludes a *n-a* $\hat{k}\hat{r}h_2os$ for this oblique $\hat{k}\hat{r}h_2es-$ (§ 53.1).

4) What remains, therefore, is the reconstruction of the oblique $\hat{k}\hat{r}h_2es-$ and the *n-a* $\hat{k}\hat{r}\hat{e}h_2$, which is only the original *n-a* anyway (§§ 57.1–2).

³² Cf. note 22 above.

³³ Both h_2eys- and h_2us- would yield Greek *aμs-* (Peters *Untersuchungen*, 11 ff., 113 ff. (summary), cf. 58 ff.). But levelling in one direction or the other in a neuter *s*-stem is virtually certain to have occurred, and generalization of the full grade is more likely than not (if—as is perfectly possible (§§ 41.2 ff.)—the levelling in question took place already in PIE or, in any case, before the Greek treatments of h_2aus- and h_2us- did away with the need for any levelling at all).

³⁴ This is not the only possible order in which these developments could have taken place, but it is likely that the oblique still had suffixal *-es-* when the nom.-acc. acquired its *-os*. It would otherwise be much more difficult to explain why this nom.-acc. ever arose at all.

5) The resulting $\hat{k}r\acute{e}h_2 / \hat{k}r\acute{h}_2-es-$ is both an innovation and necessarily analogical (§ 57.5), but would remove all the difficulties if a plausible source of its $X/X+es$ heteroclisys could be identified (§ 57.3–.4).

57.9 Just such a source, however, is now available in the word for ‘ear’, which may be counted upon to have exhibited a paradigm $n-a$ h_2eus (X)/obl. $h_2us-es-$ ($X+es$) from a very early stage of PIE until relatively late (§ 57.6). At any point in the time during which this paradigm existed, it could have served as the model on which was made the $\hat{k}r\acute{e}h_2 / \hat{k}r\acute{h}_2-es-$ which is practically indispensable to the explanation of Greek $\kappa\acute{\alpha}\rho\acute{\alpha} / \kappa\rho\acute{\alpha}\alpha\tau-$ and its reconciliation with Vedic $\acute{s}irah / \acute{s}ir\acute{s}n-$ (cf. § 57.3):

$$\begin{array}{l} \text{PIE } \hat{k}r\acute{e}h_2 / \hat{k}r\acute{h}_2-es- \rightarrow \text{Gk. } k(r)\acute{r}ah_2 / k\acute{r}h_2-s + n- \\ \downarrow \\ \text{I-Ir } \acute{s}rH-as / \acute{s}rH-as- \rightarrow \acute{s}rH-as / \acute{s}rH-s + n- \end{array} \quad [*]$$

Only a few loose ends to this proposal remain.

58.1 It may be noted that the I-Ir. developments in the ‘head’ paradigm may be placed side-by-side with the Greek developments in the case of ‘ear’ (§ 57.7):

$\hat{k}r\acute{e}h_2 / \hat{k}r\acute{h}_2-es-$	$\acute{s}rH-as / \acute{s}rH-as-$	$\acute{s}rH-as / \acute{s}rH-s + n-$
1	2	3
$h_2eus / h_2us-es-$	$a\acute{u}s-os / a\acute{u}s-es-$	$o\acute{u}s-os / o\acute{u}s-s + n-^{35}$

58.2 It has been repeatedly emphasized (§§ 52, 57.5) that an analogical process like the one just proposed is only plausible when the model and the item that comes to follow it are in some close association to one another. Unfortunately, there are no objective criteria that could help decide whether h_2eus (or $h_2\acute{a}us$) ‘ear’ and $\hat{k}r\acute{e}h_2$ (or $\hat{k}r\acute{r}ah_2$) ‘skull’ could have been a pair of the requisite type in PIE. We may therefore content ourselves with the following points:

³⁵ Parallel to the second and third stages, one could easily imagine that the neuter s -stem $pes-os / pes-es-$ ‘penis’ (Ved. $p\acute{a}sas-$, Gk. $\pi\acute{\epsilon}ος$) also had its oblique expanded by $-n-$ (at least in pre-Latin), and that the oblique of the resulting $pes-os / pes-(s)-n-$ then served as the basis for a new, non-neuter $pes(s)n-i-$ > L. *penis*. But this is not unavoidable, since an independent parallel formation in $-ni-$ is not excluded (cf. *kris-ni-* > *crines* ‘locks (of hair)’: *kris-to-* > *crista* ‘plume, crest’). Independent of the s -stem in any case are Gk. $\pi\acute{o}\sigma\theta\eta$ and the Gmc. formation seen in OHG *fasel*.

a) 'head' may be considered a "cover-term" for at least three words for body parts that were *s*-stems (either root nouns from roots in *-s* or neuters in *-es-*) from the first. These are 'ear' itself ($h_2eys / h_2us-es-$ as above), 'mouth/face' ($\acute{o}s$ —further analysis is unclear: I-Ir. $\acute{a}s$ -, L. $\acute{o}s$, Irish gen. \acute{a}), and 'nose' ($n\acute{a}s$ - : I-Ir. $n\acute{a}s$ - etc.; apparent $n\acute{a}s-(e)s-$ in Latin *nas-um*). Later on, $h_3\acute{e}k^h$ 'eye' also became partly an *-es*-stem in I-Ir. and Slavic (cf. § 55). In this context, it is not too surprising that the word for 'head' should have acquired *-es*-stem forms. Since $\hat{k}\acute{r}\acute{e}h_2$ was neuter, it is also understandable that it might follow the formal model of h_2eys (neut.) rather than $n\acute{a}s$ - (fem.). The details of any possible role played by $\acute{o}s$ 'mouth' are not recoverable since it is not clear what the paradigm of this word looked like at the relevant stage.

b) Along the same lines, it may be noted that the compound *par-ays-iō-* jointly reflected by Greek and Irish (§ 55), and therefore quite possibly inherited, seems to indicate that h_2eys 'ear', as the most prominent feature of the side of the head, served as the basis for the PIE name given to that entire part of the head (whence Greek 'cheek') or skull (whence Irish 'temple') [\ast]. This is paralleled by the use of $h_3\acute{e}k^h$ 'eye' and $\acute{o}s$ 'mouth', the most conspicuous features of the front of the head, to refer to the entire face (or to serve as the basis of names for 'face') in several IE languages.

c) The view that the PIE word for 'head' was formally rearranged under the influence of 'ear' (and that 'eye' followed suit) could have a quasi-parallel on the strictly phonological level in Common Germanic. The correspondence of Latin *caput* 'head' to OE *hafud* and OIc. *hofud* points to a root shape *kap-* for the word.³⁶ This is confirmed by Skt. *kapāla-* 'skull' together with OE *hafela* 'head' and probably L. *capula* 'bowl, cup'. But the more wide-spread Germanic form is *haufud* rather than original *hafud*. The form with *-au*-vocalism is represented in all branches (Goth. *hanbiþ*; OIc. *haufud* beside *hofud*; OHG *houbit*, OS *hōbid*, OE *heáfod* beside *hafud*). The indications are, therefore, that *hafud* became *haufud* in Common Gmc. and the original form, where retained, is an archaism. The most obvious source of the *-au-* of *haufud* is that of *ausan-* and *augan-*, and 'eye', in turn, probably owes its *au-* to 'ear' at least in part. If the Germanic word for 'head' was assimilated to 'ear' (with or without the additional influence of 'eye'), it would not seem unreasonable to suppose that PIE $h_2eys / h_2us-es-$ 'ear' could have

³⁶ Skt. *kapúccala-* 'topknot; part of the sacrificial ladle' (W-D 2.2, 483f. etc.) is less certain (Mayrhofer *KEW*i 1, 156f.).

served as the formal model on which $\hat{k}r\acute{e}h_2/\hat{k}r\acute{h}_2-$ 'head, skull' acquired an analogous paradigm ($\hat{k}r\acute{e}h_2/\hat{k}r\acute{h}_2-es-$) if such a paradigm is the only one that allows an entirely straightforward explanation of all the facts.

58.3 There is an apparent asymmetry between $h_2e\acute{u}s/h_2us-es-$ (or $h_2a\acute{u}s/h_2us-es-$), with *e/zero* (or *a/zero*) ablaut, and $\hat{k}r\acute{e}h_2/\hat{k}r\acute{h}_2-es-$ (or $\hat{k}r\acute{a}h_2/\hat{k}r\acute{h}_2-es-$) with *ē/zero* (or *ā/zero*) ablaut. This may be dealt with in more than one way, but the simplest account would be that in the paradigm $h_2e\acute{u}s/h_2us\acute{i}H/h_2us-es-$, the oblique could only be analyzed as a zero-grade of the *n-a* (which also appeared in the dual) plus *-es-*, and that the remodelling of $\hat{k}r\acute{e}h_2/\hat{k}r\acute{h}_2-$ only amounted to making the oblique conform to this analysis of $h_2us-es-$. Since oblique $\hat{k}r\acute{h}_2-$ already showed complete apophonic reduction, it was only necessary to add the *-es-*formant.

58.4 As to the mechanics of the *-n*-expansion of $\hat{k}r\acute{h}_2es-$ to $\hat{k}r\acute{h}_2-s-(e)n-$, it has already been noted (§ 57.2) that the development seems to have entailed the reduction of *-es-* to *-s-* and that this has parallels (OCS *oč-es-* : Skt. *ak-ṣ-ṇ-*; OCS *uš-es-*, Irish *au-(a)e* : *aús-(s)-n-* → Gk. *oũhāt-*). If the ultimate source of the *-n-* in the type $h_2est-n-$, $h_2us-s-n-$ etc. is that of the original *r/n*-stems, an explanation suggests itself. The models in question were of three types:³⁷ proterokinetic $-u\acute{r}/-u\acute{en}$ -stems (e.g. $sn\acute{e}h_1u\acute{r}$ 'sinew', $piH\acute{u}r$ 'fat') and acrostatic $-r/-n$ -stems ($i\acute{e}k^*r$ 'liver', $h_1óuHdh-r$ 'udder' etc.). In the first type, zero grade root was regular in the oblique before $-u\acute{en}-$ from the beginning. In the second type, *e*-grade root was original in the oblique in the very first instance. This seems to have been replaced by zero grade, but only in roots of the structure $CeR(C)$ (*C*) (possible example: $h_1uHdh-(e)n-$ 'udder'—generalized in Skt.). In other roots, the *e*-grade remained (e.g. $i\acute{e}k^*-(e)n-$ 'liver'). In addition, several of the *r/n*-stems in the relevant semantic area (e.g. $h_1\acute{e}sh_2r$ 'blood' and perhaps $só\hat{k}r$ 'excrement') prominently featured amphikinetic collective by-forms, where zero grade root in the oblique, no matter what the root shape, was also regular ($h_1\acute{e}sh_2-\bar{o}r/h_1sh_2-\eta n-$ > Hitt. *išhan-*). In short, the *r/n*-stems as a whole could have either *e* grade or zero grade roots in the oblique at the beginning of the histories of the individual languages. More often than not, it was zero grade.

The structures presented by the models were therefore varied but finite in number. But if, on the one hand, such structures served as the

³⁷ The analyses are those of Schindler, *BSL* 70, 1 ff.

models for $h_2est-n-$, $h_2us-s-n-$ etc., and at the same time were never themselves interpretable (§ 54.3) either as derived from their nom.-accusatives (in $-r$) or as expansions of a simpler n -less oblique, one cannot necessarily expect $\hat{k}r\acute{h}_2-es- \rightarrow \hat{k}r\acute{h}_2-es + n-$ or $h_2us-es- \rightarrow h_2us-es + n-$ in the first place. No proportion can be established between the $(r)/n$ -stems and the original paradigms of the secondary heteroclitics that could have led to the addition of $-n-$ to the unchanged oblique. Instead, one has to view both $h_2est-n-$ and $\hat{k}r\acute{h}_2-s-n-$ as assimilated to the structures (as a whole) presented by the $(r)/n$ -stems. And in that case, there is no reason to expect that making the oblique stem end in $-n-$ would necessarily be the beginning and end of the assimilation of the oblique structure of these items to that of the $(r)/n$ -stems. While an oblique like h_2est- , for example, could simply become $h_2est-n-$ (with a structure $CeCC-n-$ supported by h_1esh_2-n- 'blood' etc.), this was not the case with $*\hat{k}r\acute{h}_2-es-n-$ or $*h_2us-es-n-$. Structures of this sort ($C\acute{R}CeC-n-$ ³⁸) were lacking among the models. If such structures were lacking, and if at the same time zero grade (and almost exclusively monosyllabic) structures were very well represented, it is not surprising that $C\acute{R}CeC-$ was transformed into a paralleled and acceptable $C\acute{R}CC-n-$ ($\hat{k}r\acute{h}_2s-n-$, $h_2us-s-n-$; cf. $h_1uHdh-n-$ 'udder') by the elimination of the full-grade vowel.

Finally, what little evidence there is for PIE nominal formations in $-(e)s-$ plus $-(e)n$ -points to an oblique in $-s(e)n-$ (e.g. RV infinitives of the type $\acute{s}u-\acute{s}án-i$ 'swell, be mighty' and the comparable Greek formation). These may also have played a role in the reduction of $\hat{k}r\acute{h}_2-es-$ as part of the process of expanding the oblique to $\hat{k}r\acute{h}_2-s(e)n-$,³⁹ though it could only have been a purely formal one.

58.5 There remains the question of the chronology of the development. An answer can only be given within wide limits. It has already been suggested that $\acute{s}ir\acute{s}-(a)n-$ is essentially independent of $\alpha\acute{r}\alpha h-\alpha\tau-$ (§§ 54 ff.), and that the *terminus ante quem* in both cases is the treatment of $-RHC$ -sequences in Gk. and Skt. respectively (cf. fn. 38). The *terminus post quem* is the replacement of $n-a$ $\hat{k}r\acute{e}h_2$ by $\hat{k}r\acute{h}_2os$ in I-Ir. (and its consequent divergence from Greek). At the very earliest, then, the $\hat{k}r\acute{h}_2-s(e)n-$ that can be set up to unify the Greek and Skt. obliques could have been formed in dialectal PIE. If it is assumed that $-n$ -expansion (and the creation of secondary obliques) was a development of the late stages of the protolanguage itself (which is not impossible),

³⁸ Naturally the stem $\hat{k}r\acute{h}_2sn-$ was created before the loss of laryngeals in Gk. and I-Ir.

³⁹ Cf. note 5 above.

one might say 1) that the dialect ancestral to Greek had a paradigm $\hat{k}r\acute{a}h_2 / \hat{k}y\acute{h}_2-es-$, 2) the dialect ancestral to I-Ir. had $\acute{s}y\acute{h}_2-os / \acute{s}y\acute{h}_2-es-$, and that 3) both dialects belonged to the group that began to remodel certain neuter obliques on that of the (*r*)/*n*-stems (as in § 58.4 above) without regard for the formation of the corresponding nom.-acc. The result would be $\hat{k}r\acute{a}h_2 / \hat{k}y\acute{h}_2s-(e)n-$ vs. $\acute{s}y\acute{h}_2os / \acute{s}y\acute{h}_2s-(e)n-$. Naturally, this hypothesis cannot be insisted upon, and is presented only as an account of the earliest conceivable set of developments that could have led to the observable situation.

58.6 At first glance, a relatively early date for the creation of $\hat{k}y\acute{h}_2s-(e)n-$ would seem to be advisable if yet a third branch (Germanic) also pre-supposes it. The Germanic material already discussed (§ 50) was treated under the traditional assumption that the *hers(a)n*- underlying OIc. *hjarsi* (masc.) was at least indirectly related to the neuter oblique of Gk. and Skt., and two possible analyses were given. Both of them took this traditional assumption for granted, and it would seem that both are still viable if the interpretation of neuter oblique $\hat{k}y\acute{h}_2s(e)n-$ / $\acute{s}y\acute{h}_2s(e)n-$ as late PIE (but still PIE—see just above) is accepted.⁴⁰ But if, on the basis of §§ 51.2–57, it should turn out that it is better for any reason to see $\acute{s}ir\acute{s}(a)n-$ and $\chi\rho\acute{\alpha}h\alpha\tau-$ etc. as utterly independent, then the Germanic correspondent(s) should also be re-analyzed in such a way that a PIE neuter oblique $\hat{k}y\acute{h}_2s(e)n-$ (even a late one) is no longer indispensable, although $\hat{k}y\acute{h}_2-es-$ may still be invoked.

In general, of course, it is not very difficult to explain any given Gmc. *n*-stem as secondary. But whether or not we wish to retain the view that *hersan*- is ultimately related to $\acute{s}ir\acute{s}\eta / \chi\rho\acute{\alpha}h\alpha\tau-$, the feature that must be accounted for is the root *e*-grade, which was probably absent from the neuter oblique (cf. § 50.1). In any case, this *hersan*- will certainly remain the basis of the further derivatives (§ 50.8) *herznija*- (OHG *hirni* 'brain') and *herznan*- (OIc. *hjarni* 'brain') in one way or another, so that the question becomes whether *hersan*- could have had, at least hypothetically, a PIE starting point other than a neuter oblique $\hat{k}y\acute{h}_2s(e)n-$. Once the options are limited in this way, it does become theoretically possible that *hersan*- 'crown of the head' is merely a mechanically extended **hersa*- 'crown' (cf. OIc. *hnakkr* 'neck' : *hnakki* 'id' etc. § 50.8). This, in turn, would then reflect $\hat{k}erh_2s-o-$ 'belonging to/part of

⁴⁰ A late PIE neut. oblique $\hat{k}y\acute{h}_2s(e)n-$ would only have to be early enough to allow for the apophonic rearrangements called for by the radical full grade of the Gmc. masc. *hersan*- (§§ 50.1 ff.).

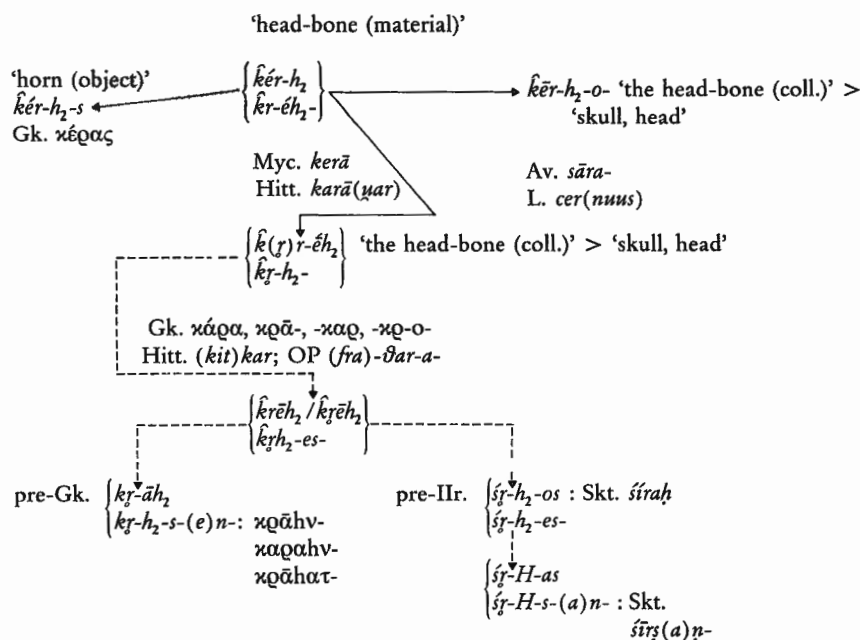
the head', an old derivative of $\hat{k}r\eta h_2-es-$ 'head'. There is, however, no conclusive evidence pointing to this particular inherited derivative,⁴¹ and the details (both formal and functional) of the further derivatives *herzn-ija-* and *herzn-an-* would remain to be worked out.

58.7 It will be recalled that much was made in the previous discussion (§§ 26.4, 36.1) of the point, first made by B. Forssman, that the identity of the Skt. oblique $\acute{s}ir\acute{s}(a)n-$ with the Gk. oblique $\kappa\rho\acute{\alpha}h\alpha\tau-$ guarantees that the n-a $\kappa\rho\acute{\alpha}$ belonged to a heteroclitic paradigm from very early on. Certain conclusions were largely based on this (§ 36.2 ff.). If it now appears that the Skt. and Gk. obliques ought to be considered independent of one another (at least to some extent), this point will have to be modified. It does not, however, lose its basic force: the paradigm $\hat{k}r\acute{e}h_2 / \hat{k}r\eta h_2 s(e)n-$ may be a Greek creation. But the paradigm which it directly succeeded (namely $\hat{k}r\acute{e}h_2 / \hat{k}r\eta h_2-es-$) was itself heteroclitic, and we may therefore continue to have some confidence in the antiquity of the apophonic structure of n-a $\kappa\rho\acute{\alpha}$.

58.8 This concludes section III, the subject of which has been the relationships among $\hat{k}ér-h_2-s$ ($\kappaέρας$ 'horn'), $\hat{k}r\eta h_2-es-$ (Skt. $\acute{s}irah / Av. sarah-$) and $\hat{k}r\eta h_2-s-(e)n-$ (Skt. $\acute{s}ir\acute{s}(a)n-$, Gk. $\kappa\rho\acute{\alpha}h\alpha\tau-$ etc., Gmc. *her-san-* etc.), and the processes by which these were derived from the previous layer of formations represented by $\hat{k}ér-h_2$ 'horn (material)' and $\hat{k}r\acute{e}h_2$ 'skull, head'. It was suggested at the beginning that $\hat{k}r\eta h_2-os$ 'head' and $\hat{k}érh_2-s$ 'horn' are best considered independent of one another (§§ 41 ff.), but one problem that was held in abeyance (§ 43.2) was the advisability of assuming that two formations that were both descriptively $\hat{k}(e)r-(e)h_2-$ would serve as the bases of twin further derivatives in $-(e)s-$. It can now be seen that the apparent parallelism between $\hat{k}r\eta h_2-os$ and $\hat{k}érh_2-s$ is illusory, since $\kappaέρας$ seems to be altogether an early creation of Greek and oblique $\hat{k}r\eta h_2-es-$ 'head' may well have become $\kappa\rho\acute{\alpha}hv-$ / $\kappa\rho\acute{\alpha}hv-$ by the time $\kappaέρας$ was formed. The two thus need never have co-existed.

⁴¹ Cf., however, note 82 (paragraph b) to Part IIIb.

59. In schematic form, the situation so far may be represented as:



$X \rightarrow Y$: Y is a derivative of X

$X \dashrightarrow Y$: paradigm Y is a remodelling of paradigm X

IV. $\hat{k}(e)rh_2-s-(e)r(o)-$ 'headgear'

60. The final group of formations to be accounted for¹ is made up of a Greek *-r*-stem and a few forms descriptively in *-ro-*/*-rā-* reflected in both Latin and Greek. The *r*-stem occurs only as a second compound member:

Myc. *seremo-karaore* PY Ta 707, 714

] *no-karaore* PY Na 1038 / *ono-kara*[PY Mn 1412²

In both of the Ta passages, we have a determinative compound used as an adverbial instrumental (once with *qeqinomena* 'carved' (?) and once with *ajamena* 'inlaid'), while *ono-karaor-* is taken to be a place-name with the instrumental in ablative function. The phonological interpretation and meaning of the first member *seremo-* are not sure; *ono-* is usually supposed to represent ὄνος 'ass', but since the compound as a whole is a place name, this cannot be verified. In any case, these Myc. forms point to a stem *-k(a)rāhor-* in composition, and this in turn has been etymologically connected with *κάρα* etc., partly because *seremo-karaapi* (cf. § 49.12) is also found in the Ta tablets (708) with a context and syntax precisely parallel to that of *seremo-karaore*. The Myc. situation itself, therefore, would make it seem likely that *k(a)rāhor-* at least denoted a body part.

The more specific connection with the group of *κάρα* is strongly supported by the practically certain identification of Myc. *-k(a)rāhor-* with the *-κραιρα* (< *-krāhr-ia* or the like³) of some post-Myc. compounds (e.g. Hom. ὄρνθος / ἐύ-κραιρα, Att. ἡμί-κραιρα). The details of their relationship will be discussed below (§§ 65 f.). For the moment, it is only to be noted that Greek (and Greek only) presents evidence of an *r*-stem *krāh-(e/o)r-*, and that the meaning of this substantive will have to be decided mainly from the indications offered by the post-Myc. evidence for this *r*-stem (namely the *-κραιρα* compounds), since the compounds in which the Myc. *r*-stem appears allow only very general semantic conclusions.

¹ Other than the various words for 'hornet' (Part V, §§ 73 ff., below).

² Cf. Risch, *SMEA* 1, 53 f.; *Docs*² 342 f., 344, 501, 502.

³ Cf. further §§ 69.3.1 ff.

61. Beside this r -stem, there is a simplex $-ro$ -formation in Latin *cerebrum* ($\hat{k}erh_2sro$ -) 'brain, skull', an apparent simplex $-rā$ - in the Hsch. entry $\kappa\acute{\alpha}\rho\acute{\alpha}\rho\alpha$ $\kappa\epsilon\phi\alpha\lambda\acute{\eta}$ ($\hat{k}rh_2sreh_2$),⁴ and a compositional second member $-\kappa\rho\acute{\alpha}\rho o$ - ($-\hat{k}rh_2sro$ -) in Att.-Ion. $\nu\acute{\alpha}\upsilon$ - $\kappa\lambda\eta\rho\omicron\varsigma$ 'ship-owner, ship's captain', Attic $\nu\acute{\alpha}\upsilon$ - $\kappa\rho\alpha\rho\omicron\varsigma$ 'chief official' (cf. Hsch. $\nu\acute{\alpha}\upsilon\kappa\lambda\alpha\rho\omicron\iota$ $\delta\acute{\eta}\mu\alpha\rho\chi\omicron\iota$), and in the Boe. personal name $(\Lambda)\alpha$ - $\kappa\rho\alpha\rho\iota\delta\alpha\varsigma$, a patronymic implying a $*\Lambda\alpha$ - $\kappa\rho\alpha\rho\omicron\varsigma$. In theory, these Greek $-ro$ -/ $-rā$ stems could be taken as derivatives of $\kappa\acute{\alpha}\rho\alpha$ / $\kappa\rho\acute{\alpha}$ - 'head' rather than $\hat{k}rh_2-(e)s$ -, but it would seem arbitrary to separate them completely from the r -stem (§ 60) that also appears in Greek, and Myc. $-\kappa\alpha\alpha\omicron\omicron r$ - practically guarantees that the r -stem had $-s$ - before the $-(e/o)r$ -formant. This analysis is also required for *cerebrum*. It therefore seems best to proceed on the assumption that oblique $\hat{k}rh_2es$ - 'head' (§§ 57 ff.) served as the basis of a derivative in $-(e/o)r$ -, whose meaning has yet to be determined, and a derivative in $-ro/rā$ - which, in the case of *cerebrum*, clearly names a part of the head, and in the case of $\kappa\acute{\alpha}\rho\acute{\alpha}\rho\alpha$, seems synonymous with the ultimate derivational base $\hat{k}rh_2es$ - (and with $\kappa\acute{\alpha}\rho\alpha$ / $\kappa\rho\acute{\alpha}h\alpha\tau$ - etc. as well). The stem $-\kappa\rho\acute{\alpha}\rho o$ -, found only in compounds, is ambiguous. It could either represent a simplex $\kappa\rho\acute{\alpha}\rho o$ -, or a compositional form of $\kappa\acute{\alpha}\rho\acute{\alpha}\rho\alpha$, or the r -stem plus compositional $-o$ -. The question, then, is the exact relationship between $\hat{k}rh_2s(e/o)r$ - and $\hat{k}(e)rh_2sro$ -, and the relationship between both of these and $\hat{k}rēh_2$ / $\hat{k}rh_2es$ -/ $\hat{k}rh_2s-n$ -.

62.1 Strategically, the analysis of the $-ro/rā$ forms ought to be made to depend upon that of the $-r$ stem because in and of themselves they are somewhat ambiguous. For *cerebrum*, e.g., one might consider the possibility of an r -stem $\hat{k}rh_2s-(e/o)r$ 'head' from which is made a denominative adjective $\hat{k}rh_2s-r-o$ - 'in/on the head', superficially parallel to $\mu\omicron d-r/\mu\epsilon d-\bar{o}r$ 'water' \rightarrow $\mu d-r-\acute{o}$ - 'in the water' (which becomes the name for various animals found there— $\upsilon\delta\rho\omicron\varsigma$ 'water-snake', OHG *ottar* 'otter' etc.). The full grade root of *cerebrum* would be conditioned by substantivization of the adjective. The admissibility of such an analysis, however, obviously depends on whether or not there is evidence favoring a $\hat{k}rh_2s-(e/o)r$ 'head' of some sort.

62.2 On the other hand, $\hat{k}erh_2sro$ - 'brain, skull' could represent most directly a $-ro$ - derivative of $\hat{k}rh_2es$ - 'head'. In purely descriptive terms, it is possible to identify some secondary $-ro$ -formations in which

⁴ Latte Hsch. *sv* suspects that $\kappa\acute{\alpha}\rho\acute{\alpha}\rho\alpha$ is a dittography for $\kappa\acute{\alpha}\rho\alpha$. I thought this possible but not necessary in 1976 (cf. Preface). See now Peters *Untersuchungen*, 241.

the suffix has exactly the function that would be required here. For example, one might compare $\hat{k}rh_2s-ro-$ 'in/on the head' to derivatives like RV *rathirā-* '(riding/carried) in a chariot' or, still more directly, to *nas-ro-* 'at the nose' (cf. Lith. *nasraĩ* 'oral cavity', MLG *nus(t)er* 'nostril'). Since $\hat{k}(e)rh_2s-ro-$ can designate a part of the head, a further parallel might be *dhegh-om-* 'earth' (χθών, Hitt. *tekan* etc.) vs. *dhghem-ro-* 'field' (Hitt. *gimra-s*), descriptively a kind of "partitive" derivative.

It is altogether possible that a "locative" *-ro-* formation like *nas-ro-* or a "partitive" one like *dhghem-ro-* may be combined by further analysis, and it may even be that *udro-* is not to be considered something entirely different from these either. This question will come up again later. What is most immediately required is some specification of the function and derivational history of Greek $-k(a)rāh-(e/o)r$. Only on this basis can the *-ro-* and *-rā* formations begin to be analyzed.

63.1 As far as the *r*-stem itself is concerned, it has already been noted (§ 60) that 1) it occurs only in Greek and only in compounds 2) Mycenaean has compositional $-k(a)rāhor-$, while $-xpaipa$ ($-xpaipā$) is found later, from Homer onward 3) the exact meaning of Myc. $-k(a)rāhor-$ cannot be directly determined and must therefore be gathered, if possible, from what can be told from $-xpaipa$.

Beyond this, a few conclusions may be drawn from the small number of additional facts that Myc. does provide. The forms with which $-k(a)rāhor-$ will have to be aligned are

- 1) the inst. pl. simplex *ka-ra-a-pi* (§ 49.12)
- 2) the inst. pl. determinative compound *seremo-karaapi* 'with seremo-heads' (§ 63.2)
- 3) the nom. sg. determinative or possessive compound *qou-kara* 'ox-head' or 'ox-headed'
- 4) the nom. sg. possessive compound *a-karano* (= *a-krāhnos/a-karahnos*) 'headless' (PY Ta 715)

63.2 On the basis of this material, there are the following points to be made.

- 1) The *-or-* of $\hat{k}(a)rāh-or-$ could represent either an *o*-grade of the *r*-formant or a phonological development of $-r-$ to *-or-*.⁶ But in neither case can the same stem be identified in *karaapi* (as if =

⁵ Cf., most recently, Eichner, *Hethitisch und Indogermanisch*, 57 note 49.

⁶ So Peters *Untersuchungen*, 241 ff.

* $\hat{k}(a)r\bar{a}(h)ar-phi$).⁷ If the instrumental singular of a given compound (*seremo-karaor-e*) shows $-k(a)r\check{a}hor-$ (for no matter what reason), it is extremely unlikely that the instrumental plural of precisely the same compound would have a different stem shape in that second member.⁸ In other words, one would have to expect *seremo- *k(a)r\check{a}(h)or-phi*. In addition, it would be totally arbitrary to assume that *seremo-karaapi* 'with *s*-heads' does not simply contain *karaapi* 'with heads', and this simplex, in turn, cannot be reasonably dissociated from Hom. $\kappa\rho\bar{\alpha}\alpha\tau$ -etc.

2) If $-kara$ (= $\kappa\acute{\alpha}\rho\alpha$), $karaa(t)-$ (= $\kappa\rho\acute{\alpha}\alpha\tau$ -), and $-kara(h)n-$ / $-kr\bar{a}hn-$ ($\kappa\acute{\alpha}\rho\eta\nu-\alpha$) are all found in Myc. with the meaning 'head', it is very difficult to suppose that the relationship among these stems in Myc. was anything essentially different from that which obtains in Homer—namely that they constituted the paradigm for 'head' with no other stems involved ($\kappa\acute{\alpha}\rho\alpha$: *n-a*. sg. only: $\kappa\alpha\rho\alpha h\nu$ - *n-a* and gen. pl. only; $\kappa\rho\bar{\alpha}\alpha(\tau)$ - for the rest. cf. § 49).

3) Both for this reason, and on general principles, there is no way whatever of justifying a simplex meaning 'head' that includes in its paradigm an *r*-stem in addition to *karā* and *krāha(t)-* / *karahn-*. More particularly, if the Myc. simplex inst. pl. is made on *krāha(t)-*, it is sure that the entire singular (except for the *n-a*) was also made on *krāha(t)-*. There is no such thing as a paradigm with an oblique singular in *-r*- and an oblique plural in *-n*-⁹ either in Greek or any other IE language.

4) Therefore, if $-k(a)r\check{a}hor-$ means 'head' at all, then Myc. has two lexical items that both mean this. One is the *karā* / *krāha(t)-* (and *karahn-*) that appears in post-Mycenaean Greek as the word for 'head'. The other would either be an *r*-stem (as a simplex) from the first or an *r/n* stem that had generalized *r* throughout the entire paradigm (like $\pi\bar{\upsilon}\rho$ 'fire', e.g.) by the time the *-karaor-* compounds were formed. One thing that may be excluded (for this hypothetical second Mycenaean word for 'head') is the assumption of an *r/n* stem simplex (still heteroclitic) that appears as an athematic *r*-stem when it is used as the second member of a compound.

⁷ Cf. Risch, *SMEA* 1, 63; Peters *Untersuchungen*, 235.

⁸ Naturally, intra-paradigmatic distinctions in stem allomorphy of the well-known types sg. $\alpha\rho\nu$ - : pl. $\acute{\alpha}\rho\nu\alpha$ - 'lamb', $\phi\rho\varepsilon\nu$ - : $\phi\rho\alpha$ - 'midriff' etc., $\pi\alpha\tau(\epsilon)\rho$ - : $\pi\alpha\tau\rho\alpha$ - 'father' do not go very far toward allowing for a $-k(a)r\check{a}(h)or-$: $-k(a)r\check{a}(h)ar-$ in this case.

⁹ Cf. Risch, *SMEA* 1, 61 ff.; Perpillou, *KZ* 88, 230 ff.; Peters *Untersuchungen*, 235 ff.

These negative conclusions provide the limits within which an overall analysis of *-karaor-* could be admissible if this is the stem of a substantive meaning 'head'. But as already noted (§ 60), the Myc. material in and of itself does not demand this meaning for this formation. The parallelism of *seremo-karaore* and *seremo-karaapi* does not guarantee that a *karaor-* is precisely the same thing as a *kraa(t)*- 'head'. As for the place-name *ono-karaor-*, even if it is correctly interpreted as containing ὄνος 'ass' as its first member, the head is not the only possible body-part of the animal that could come into question; and the identification of *ono-* is not absolutely secure either (cf. § 69.2).

64. Throughout this discussion, considerable emphasis has been laid upon the actual meaning of each of the relevant formations and an attempt has been made to ascribe semantic distinctions among them to securely assumable derivational processes, the advantage of this procedure being that a systematic and testable view of the complicated group in question emerges in this way. For the subset of forms now under discussion, it appears that the analysis of the *-ro-/-rā-* forms is impossible without an interpretation of the *r-* stem that stands beside them (§ 62). But the evidence bearing on the question of what this *r-* stem meant consists entirely of Myc. *-karaor-* plus the *-κραῖρα* compounds (Hom. +), and it now would appear that the Myc. part of this evidence is insufficient for the purpose (§§ 60, 63). As a result, the formations in *-r(o/ā)-* can be analyzed only if the *-κραῖρα* compounds offer the needed information. We may now turn to these. They involve complications of their own.

65.1 There are only a limited number of *-κραῖρα* compounds: nine altogether. Among these nine, we may descriptively distinguish, on several grounds, between:

1) a set of eight compounds in *-κραῖρα* (with or without later, back-formed *-κραῖρος*), which are all adjectival (possessive), occur only in poetry of elevated style (mainly epic and tragedy), and are applied only to cattle and ships in the early examples (and most of the later ones as well).

2) the compound ἡμί-κραῖρα which is Attic only, never occurs in elevated poetry (inscriptions and comic dialogue only), clearly means 'half the head', and therefore does not seem to be a possessive compound like all the others.

It would appear, then, that not even an immediate and straightforward evaluation of the -κραιρα formations is possible just yet. A reconciliation of ἡμί-κραιρα with the others is necessary first.

65.2 The question of the meaning of the possessive -κραιρα compounds will be dealt with first. The divergent ἡμί-κραιρα and its relationship to the others will be taken up after that.

The possessive compounds in *X-κραιρα* (and/or later masc. and compositional -κραιρος), when they have a literal, physical use at all, always mean 'having horns of X sort'.

Hom.: βοῶν ὀρθοκραιράων # Θ 231, Σ 573, μ 348, *H. Herm.* 220 (cf. Aesch. *Fr.* 109.2 ὀρθόκερως βοῦς) 'straight-horned cattle'; βοσὶν ἐνκραιρήσιν # *H. Herm.* 209 'cattle well-endowed with horns'

Aesch.: ἐνκραίρω βοί *Supp.* 300

Oppian: τανύκραιρος ἔλαφος *Cyn.* 1.191 'long-horned stag'

AP 6.32 (Agath.): δίκραιρος (alongside clearly synonymous δίκερως) 'two-horned'

AP 6.74 (Agath.): τανύκραιρος ταῦρος 'long-horned bull'

Nonnus: ὁμοκραίρω (παρακοίτη) *D.* 1.336 'with like horns'
βοοκράϊρων (λέκτρων) *D.* 13.314 '(decorated) with ox horns'

ἰσοκράϊροιο (Δηριαδῆος) *D.* 27.24 'with horns just as long'

Among the usages that are not absolutely literal, these adjectival -κραιρα formations are most often applied to ships:

Hom.: νεῶν ὀρθοκραιράων Σ 3, Τ 344

Oppian: νήεσσιν ἐνκραιρίοις (*Halient.* 2.516)

Tryph.: νῆας ἐνκραιρίους (*Halosis* 213)

The only other form of any importance¹⁰ is

¹⁰ Μελάγ-κραιρα is at least an epithet and almost a personal name that is found late enough (Lyc. *Alex.* 1464, ps-Arist. *Mir.* 838²⁹) that it is not likely to have been one of the original instances of Gk. -κραιρα compounds. One must therefore allow for a certain amount of re- (or mis-) interpretation of one or more of the older -κραιρα compounds in the eventual formation of μελάγ-κραιρα. But even so, the most plausible interpretation of the epithet would seem to be 'black-haired', and it would thus appear to be one of several cases in which a 'horn' word is used to denote 'hair'. For other examples, see note 30 to Part II a. Viewed in this way, μελάγ-κραιρα constitutes no exception to the general observation that the -κραιρα compounds in question here mean 'horned' in principle.

A. R. δίκραιρα *Arg.* 4.1613 'cleft' (cf. δίκροος § 3.3 and *AP* 6.32 above).

It is therefore to be noted that possessive *X-κραιρα* never literally means 'having a head of *X* sort'. In addition, an original meaning 'X-horned' is anything but disfavored by the application of ὀρθό-κραιρα (and later ἐύ-κραιρος) to ships. There are good parallels for the use of forms that etymologically mean 'horn' (or are derivatives of such) to designate the projecting parts of a ship. Already in Homer is found the term κόρυμβα (νηῶν ... ἄκρα κόρυμβα *I* 241 'the high projecting parts of the ships'), which is clearly a derivate of $\hat{k}or-u$ - 'horn' (§ 5). A somewhat more specific piece of ship terminology is κεραία 'yard-arm' (Aesch., *Thuc.* +), which also denotes other projections (antennae, the boom of a crane etc.) and is the substantivized fem. of κεραιό- 'horn-like', a derivative of κέρας. Given the occurrence of βοῶν ὀρθοκραιράων and the etymological connections of κόρυμβα and κεραία, the natural interpretation of νεῶν ὀρθοκραιράων is something like 'ships with straight projections (i.e. yards, booms, spars, bowsprits, masts, etc.)'.¹¹ As already noted, Apollonius' δίκραιρα 'forked, cleft' has a precise parallel in δί-κροος (< $\hat{k}r-ou-o$ -) 'cleft', which means 'having two horns' etymologically.

On the basis of their uses in the texts themselves, it would seem that the possessive -κραιρα compounds all mean '-horned'. In their literal sense, they are applied only to horned creatures. For the more metaphorical applications, the available parallels also suggest this meaning.

65.3 There is, however, a complicating aspect to the whole question. The problem of assigning compositional -κραιρα a basic meaning (and the use of ὀρθοκραιράων in Homer with both βοῶν and νεῶν) was already much discussed by the ancient commentators. But their discussions are in general very confused. This is because they typically insist upon two mutually exclusive points:

1) βοῶν ὀρθοκραιράων means 'straight-horned cattle': Hsch., Apollon. *Lex. s. v.* ὀρθόκραιρα; schol. to Σ 573

¹¹ For the metaphorical use of '-horned' compounds to describe ships in particular cf. *höhhurnid* (*Heliand*).

In contrast, ship-part terms that are also words for 'head' (or are derivatives of words for 'head') do not exist at all in Homer or any relatively early Greek text. The only one I know of is κεφαλίζ 'rope attached to the prow', which is found in Polyaeus.

2) -κραιρα means κεφαλή 'head': Hsch. s. v.; schol. to Θ 231, Σ 3; Eust. 710.47 ff., 1127.35 ff.

In order to reconcile these two irreconcilable statements, they engage in argumentation (cf. Apollon, *Lex.*) and contortions (cf. both Eust. passages above) that need not be summarized in detail here.

The texts themselves sufficiently explain why the possessive -κραιρα compounds, when used of cattle, are said by the commentators to mean '-horned'. The reason for their insistence that -κραιρα means 'head', however, is not at all clear from any passage in which one of these possessive compounds actually appears. But the reason is given more than once (schol. to Σ 3, both Eust. passages), and in so many words. We are told that -κραιρα must mean 'head' because Attic ἡμίκραιρα means τὸ τῆς κεφαλῆς ἥμισυ 'half the head'. In other words, it is clear that the ancient commentators were quite naturally deducing the meaning of the poetic possessive compounds (even against the context) from the meaning of the one and only everyday -κραιρα compound in the language—or at least they did so whenever it seemed possible (so generally not in the case of cattle described as X-κραιρα).

To be sure, it is necessary to come to some understanding of the relationship between the adjectival -κραιρα forms and the apparently determinative ἡμίκραιρα. But it is now clear at the same time that imposing the meaning 'head' (because of ἡμίκραιρα) on the possessive compounds only leads to the self-contradictions that characterize the ancient discussions of the question.

65.4 It is clear from the beginning that it is unsatisfactory to assume that ὀρθό-κραιρα 'straight-horned' and ἡμί-κραιρα 'half the head' have two different, but homonymous second members, one meaning 'horn' and the other 'head'. It is also possible to dismiss the assumption that the possessive -κραιρα compounds originally meant '-head(ed)', and that their application to βόες led to their being re-interpreted as meaning '-horned':

1) There is no example of a possessive -κραιρα compound that could and/or should be taken to have this hypothetically original meaning.

2) This would therefore amount to the peculiar claim that 'X-headed' shows up as X-κραιρα only if the head in question also happens to have horns on it as well (or 'projections' in the case of ships). This consideration gains additional force from the fact that 'X-headed',

for things that have no horns or other conspicuous projections, is regularly expressed by compounds in -κρᾶνος/-καρᾶνος or -κεφαλός. This is already the case in Myc. (*akarano* 'headless' PY Ta 715). It is also true of Homeric usage (οὔλοκάρηνος Εὐρυβάτης 'wooly-headed E.' T 246), and in view of βοῶν (τ) ἴφθιμα κάρηνα # (Ψ 260, 4x *H. Herm.*)—to which cf. ἵππων ξανθὰ κάρηνα # I 407—it is not easy to explain why 'cattle with erect heads' would not appear as something like βοῶν ὀρθοκρήνων in the first place if this were the intended meaning (cf. Pi. ἑκατόγ-κρανος 'hundred-headed', Bacch. χαλκέοκρανος 'bronze-headed' and in particular τύμβον ὀρθόκρανον *S. Ant.* 1203).

For the moment, then, there is no choice but to adopt the working hypothesis that the possessive compounds in -κραῖρα simply meant 'horned'. Their alignment with the divergent ἡμίκραῖρα will then be a separate question.

65.5 In the meaning 'horned' the further analysis of the adjectival -κραῖρα compounds is reasonably straightforward. Strictly speaking, it would be theoretically possible to take them as having a second member *κραῖρα that itself (as a simplex) means 'horn'. But this is not the best possible interpretation. It is disfavored by the following factors:

1) There is no positive indication that such a simplex ever existed. Hesychius does have an entry κραῖρα: ἡ κεφαλὴ καὶ ἀκροστόλιον, but this could be simply a gloss of the second members of (ἡμι-)κραῖρα and (νεῶν ὀρθο-)κραῖράων respectively. The same may be said of κραῖραι: στόλοι νεῶν. μέτωπα. κεφαλαί, and both ἡμίκραῖρα and ὀρθοκραῖράων appear themselves in Hesychius. Outside of Hesychius, κραῖρα is found only in the midst of comments on Homeric ὀρθοκραῖράων (*Eust.* 710.50, *schol.* Θ 231). It may be safely assumed that κραῖρα is decompositional in all such cases.

2) A possessive compound with a second member that is a -κᾶ stem as a simplex, and remains such in the compound, is less well paralleled than one might wish. As far as Homer is concerned,¹² the only such case is ἄγυια 'street': εὐρυάγυια 'with broad streets' (used with πόλις or the (fem. sg.) name of a specific city). It is substantially more common for the -κᾶ stem simplex to become a -κιο-stem as the second member of a possessive compound (e.g. ὄργυια: ἐννεόργυιος 'con-

¹² After Homer, one could mention ἔθειραι 'hair, mane etc.' beside εὐ- (*Anacr.*), πυρι- (*B.*), τανυ- (*Pi.*) ἐθειρα.

- taining nine fathoms, nine fathoms long'¹³). This is even the case when the compound modifies a feminine (ὀρίζα : πρόρριζος δρυς 'a tree with its roots projecting'—i.e. 'uprooted').

3) The assumption of a simplex κραῖρα beside the *r*-stem κραῖ(ε/ο)ρ- guaranteed by the Myc. *-karaor-* compounds (whatever their meaning) unnecessarily requires two simplex formations where one will do (see below).

65.6 It is therefore safer to classify the possessive -κραῖρα compounds among those of the type ἀμφι-έλισσα 'with a curve on either side', ἀργυρό-πεζα 'silver-footed', ἡρι-γένεια 'with an early birth', κυδι-άνειρα 'having (= full of) famous men' etc. These formations have -ῖα by virtue of being feminine adjectives, not because their second members are -ῖα stems as simplicia (which they are not). As such, they correspond to masculine adjectives that lack the -ῖα but mean exactly the same thing (cf. τράπεζα a substantivized feminine adj., with τρί-πους, a substantivized masculine. So also ἀντι-άνειρα : Ἀντ-ήνωρ, -γένεια : -γενής etc.). Putting ὀρθό-κραῖρα in this group thus amounts to interpreting it as the feminine of an *ὀρθο-κράωρ 'straight-horned'. This, in turn, leads to an important conclusion. The *r*-stem κραῖh-(ε/ο)ρ- that underlies the possessive -κραῖρα compounds, and that presumably appears itself in the Myc. *-karaor-* compounds, means 'horn(s)'.

This view is perfectly compatible with the Myc. material, since the precise meanings of the *-karaor-* compounds are not really known in any case (cf. below § 69.2). In addition, it is not especially attractive to see in *-karaor-* the stem of a word for 'head', since this would practically require that Mycenaean had two different but cognate words for this (§ 63.2), and that one of them (the *r*-stem) inexplicably turns up in post-Myc. possessive compounds with the meaning '-horn(ed)'.

66.1 As already noted (§§ 65.1, 65.3), however, Attic ἡμίκραῖρα does not square in any obvious way with a stem κραῖh-(ε/ο)ρ- that means 'horn(s)'. This problem must now be looked into.

¹³ If one supposes (without insisting on it) that the type of compound exemplified by ἐννεόργυιος is in the very last analysis a sub-type of possessive compound in the broadest sense.

Formally parallel is ἄρουρα beside the governing compound ἐπάρουρος.

ἡμίκραια occurs only five times in texts:

Ameipsios 7 (Kock 1, 672):

έντευθενὶ δίδοται μάλισθ' ἱερώσυνα,
κωλῆ, τὸ πλευρόν, ἡμίκραιῷ ἀριστερά

Ar. *Thesmo.* 227:

... οὔκουν καταγέλαστος δῆτ' ἔσει
τὴν ἡμίκραϊαν τὴν ἑτέραν ψιλὴν ἔχων;

Krobylos 6 (Kock 3, 380):

εἰσῆλθεν ἡμίκραια τακερὰ δέλφακος.
ταύτης μὰ τὸν Δί' οὐχὶ κατέλιπον δ' ἐγὼ
οὐδέεν.

IG 2² 1356 (early 4th c.):¹⁴

ἐπὶ δὲ τράπεζαν κωλῆν, πλευρόν ἰσχίῳ
ἡμίκραϊαν χορδῆς (repeated)

IG 2² 1359 (later than 1356):¹⁵

ἐπὶ τράπεζαν καταρχή[ν γαλα-]
θηνοῦ : IC : διδόναι δὲ καὶ το
σκέλος πλευρόν ἡμίκραια[ν]
τὴν καταρχήν

66.2 Despite the relative infrequency of its attestations, it is clear, as we have seen, that the word was well-known to commentators on Homer and was identified as peculiarly Attic. From the contexts in which ἡμίκραια is found, a couple of additional factors emerge:

1) There is no doubt that it refers to ‘half the head, a *sinciput*’. This is especially clear from Ameips. ἡμίκραιῷ ἀριστερά ‘the left *sinciput*’ and Ar. τὴν ἡμίκραϊαν τὴν ἑτέραν ‘(only) one *sinciput*’; and the commentators are unanimous on this.

2) But a point that is never made by the ancient sources who give the form and its meaning is that a ἡμίκραια is not simply a *sinciput*. It is also typically something more specific—namely a ἱερώσυνον, a part of a sacrificial victim given to the priest at a sacrifice as his perquisite. It is mentioned as such in the Ameipsios passage along with the κωλῆ ‘ham’ and the πλευρόν ‘rib’. The two inscriptions that mention the ἡμίκραια (ἐπὶ τράπεζαν ‘on the offering-table’) are themselves

¹⁴ LGS, no. 24.

¹⁵ LGS, no. 25.

devoted entirely to the enumeration of priestly ἱερώσυνα . In the first of them, the κωλῆ again figures along with it, and so does a rib (πλευρὸν ἰσχίῳ 'rib of the hip-joint' = last or lowest rib?). The expression ἡμίκραια χορδῆς 'a sinciput of intestine' is somewhat obscure,¹⁶ but there is no doubt that this is again a part of the animal given to the priest. In 1359, the πλευρὸν and the ἡμίκραια appear together once more as ἱερώσυνα . It therefore seems likely that ἡμίκραια is most accurately glossed as 'priestly perquisite consisting of half the head of a sacrificial victim'. This is demanded by three of the passages above, it is consistent with the Krobylos fragment as well, and suggests that Aristophanes' reference (*Thesmo.* 227) to the ἡμίκραια of a human being is simply a joke.

66.3 As to the morphology, the simplest conceivable analysis would be to take ἡμίκραια , descriptively, as a determinative compound of ἡμι- 'half' plus a -κραια that means 'head'. Historically, this would leave open several possibilities, but none of them is very attractive, partly for reasons that have already been touched upon:

1) The assumption of ἡμι- plus a simplex κραια 'head' suffers from the lack of any evidence of such a simplex (cf. § 65.5 no. 1) in any meaning.

2) On the general principle of economy of reconstructed formations, it is desirable, if possible, to avoid having to operate with two different r -stems, one meaning 'horn(s)' (and required by the possessive -κραια compounds), and the other meaning 'head'. This suggests looking in a direction other than the reconstruction of a masculine determinative $*\text{ἡμικραῖω}$ or neuter determinative $*\text{ἡμικραῖον}$ 'sinciput' that has been expanded by a more-or-less functionless -ια suffix, yielding fem. ἡμίκραια 'sinciput'. For this would require just such a second r -stem.

3) The same consideration would disfavor the assumption that some possessive (or governing) compound with a second member -κραῖη-(ε/ο)ρ- 'head' and (adjectival feminine) -ῖα (type τράπεζα etc. § 65.6), of the form $X\text{-κραῖη-ῖα}$, and the meaning 'X-headed', served as the analogical source of a second member -κραια 'head' in the determinative compound ἡμίκραια .¹⁷ In addition to the questionable

¹⁶ 'pars maxillae farcimine completa' (?): LGS, 81.

¹⁷ Since the morphological characteristics of possessive compounds are occasionally transferred to determinative compounds (cf. most recently Peters *Untersuchungen*, 236

plausibility of the second *r*-stem, however, this explanation encounters the objection that there are no possessive compounds in -κραῖρα that ought to be taken as meaning 'headed' (§ 65.2). This is expressed by -κ(α)ρᾶνο- in Myc., Hom., and later on as well (§ 65.4 no. 2).

4) Finally, we may decline to assume that some compound of the *X*-κραῖρα ('*X*-horned') group was re-interpreted as meaning 'X-headed' and that this re-interpreted example was the source of the -κραῖρα 'head' of a determinative ἡμί-κραῖρα. Such a scheme is entirely implausible without a surely re-interpreted example.

66.4 The problem, therefore, is that -κραῖρα is the second member of a number of possessive compounds meaning 'horned', but also appears in one determinative compound where it seems to mean 'head'. Nor is it easy to see how either one of these functions could be a secondary extension of the other.

There is, however, one way of explaining the apparent divergences of ἡμίκραῖρα from ὀρθόκραῖρα etc. ('head' vs. 'horn(ed)', determinative vs. possessive). The basis for such a solution is offered by a statement in Eustathius. When the κραῖρα (of ἡμίκραῖρα) is glossed (cf. § 65.5), it is usually said simply to mean 'head'. But at 710.50 Eustathius gives a somewhat more precise definition, saying κραῖρα γὰρ Ἀττικῶς τὰ περὶ τὴν κεφαλὴν 'for in Attic, κραῖρα means what is at the head'. In other words, κραῖρα refers to the features, characteristics, parts, etc. of the head or, one might say, 'headgear' in a broad sense (including the natural accouterments of a head).

66.5 If this definition of -κραῖρα is taken as the starting point, there is no problem with ὀρθόκραῖραι βόες, which will mean, in the very first instance, 'cattle with straight headgear, straight head-equipment', or ἔυκραῖραι βόες 'cattle well-provided with headgear'. Pragmatically, the 'headgear' of cattle are their horns first and foremost. Once these possessive -κραῖρα compounds had become traditional Homeric epithets of cows, and had thereby acquired the meaning 'horned' for all intents and purposes, their transferral to ships is easy to account for in light of the parallels in κόρυμβα and κεραία (§ 65.2). After Homer, possessive compounds in -κραῖρα (and -κραῖρος) in the meaning 'horned' continued to be used almost exclusively as epithets

with note 183), the idea here would be, for the sake of argument, that pairs like possessive ἅ-πάτωρ: determinative μητρο-πάτωρ led to a determinative ἡμί-κραῖρα beside possessive ἔυ- (etc.) κραῖρα.

of horned creatures and ships. Even Apollonius' δίκραιρα 'forked, cleft' is not much of a departure. It is simply a learned, artificial coinage made by a process like ὀρθόκερως (A) : ὀρθόκραιρα (Hom.) = δίκερως (*H. Hymn* +) : X, and used in a trivial metaphoric meaning. In short, the epic tradition finally preserved only two X-κραιρα compounds, and happened to use them as epithets of cattle (and then ships), where the interpretation of 'X-horned' was the most natural. As a result, the -κραιρα compounds of post-Homeric elevated poetry, which are all Homericisms, always mean '-horned', and this is a semantic specialization due to the limited Homeric distribution of -κραιρα epithets.

Outside the epic dialect, however, there is no reason to expect that X-κραιρα 'having headgear of X sort' would have been used only to describe cattle. For the interpretation of ἡμίκραιρα, which is certainly not a Homericism (and which is the only -κραιρα compound of which that can be said), this is an important point. The other essential factor is that a ἡμίκραιρα, as pointed out above, is not simply 'half a head' but rather a *ἱερώσυνον* that consists of half the head of a sacrificial animal.

These two points taken together make it possible to interpret ἡμίκραιρα as (originally) precisely parallel to ὀρθόκραιρα 'having straight headgear'. The Attic form may be seen as a substantivized feminine adjectival (possessive) compound that first meant 'having (= consisting of) half the headgear'. The substantivization of the feminine of a possessive compound is paralleled by such cases as τράπεζα 'table' (< 'having four feet' fem.) and ἄμαξα 'wagon' (< 'having one axle' fem.). For both the substantivization of the feminine of a possessive compound¹⁸ and, more specifically, of one that means 'having X' in the sense of 'consisting of X', we may compare ἑκατόμ-βη (*hekaton-g^hμ-ā*), an offering 'consisting of 100 cattle' (fem.). It may also be noted that κωλή (< κωλέα) 'ham', which typically appears in conjunction with the ἡμίκραιρα, is also a substantivized feminine adjective. Finally, other possessive compounds with ἡμι- as first member are found in Greek –e.g. ἡμίοποι (αὐλοί), Anacr., '(flutes) with half the usual number of holes' (: ὀπή); ἡμιστραγάλιον, Arist., '(creature) with only one ἄστρογάλος'—and there are parallels elsewhere (e.g. L. *semi-animis* Enn. + 'half-alive') [*].

66.6 Morphologically, -κραιρα is still best taken not as reflecting a simplex -κραι stem (which is never found—§ 65.5 no. 1), but rather as an

¹⁸ If compounds of the so-called dvigu type may be considered a special development of possessive compounds. This is admittedly not necessarily the case.

r-stem with a - $\chi\alpha$ which only functions to make a feminine of possessive X - $\kappa\rho\alpha h(\epsilon/o)\rho$ - 'having X headgear' (§ 65.6). The *r*-stem second member of these compounds is still presumably to be identified with that of the Myc. *-karaor-* compounds, and the relationship between *-karaor-* and fem. $\kappa\rho\alpha\iota\rho\alpha$ is then about the same as, e.g., ($\tau\rho\acute{\iota}$ -) $\pi\omicron\delta$ - 'having (3) feet' (m.) and ($\tau\rho\acute{\alpha}$ -) $\pi\epsilon\zeta\alpha$ 'having (4) feet' (f.).¹⁹ This, in turn, would lead to the conclusion that *-karaor-* means '(thing) on the head, head-accouterment, part of the head', but may or may not mean, more specifically, 'horn(s)' (cf. § 65.6).

67. To summarize quickly, the Greek *r*-stem under discussion here (and assuming more than one is unnecessary) appears as the second member of two Mycenaean compounds: *seremo-karaor-* and *ono-karaor-*. Its exact meaning in these compounds cannot be precisely determined and, strictly speaking, it is not even possible to tell with complete certainty whether they are determinatives or substantivized possessives. The first interpretation is favored, at least for *seremo-karaor-*, by the parallel *seremo-karaapi*, however.

In post-Myc. Greek, this *r*-stem also appears only in compounds, and furthermore only in feminine ones with an additional - $\chi\alpha$. In this group belong two Homeric examples ($\delta\rho\theta\acute{o}$ -/ $\acute{\epsilon}\nu$ - $\kappa\rho\alpha\iota\rho\alpha$) that are adjectival, and one Attic example ($\eta\mu\acute{\iota}$ - $\kappa\rho\alpha\iota\rho\alpha$) that behaves like a substantive. The Homeric and Attic forms can easily (and only) be combined satisfactorily by interpreting the *r*-stem that they both contain as originally meaning 'thing on the head, item of headgear' ($\tau\grave{\alpha}$ $\pi\epsilon\rho\acute{\iota}$ $\tau\eta\nu$ $\kappa\epsilon\phi\alpha\lambda\acute{\eta}\nu$ -Eust.). Thus the Homeric examples began as feminine possessive adjectives meaning 'having straight head-accouterments' ($\delta\rho\theta\acute{o}\kappa\rho\alpha\iota\rho\alpha$) and 'having good head-accouterments' ($\acute{\epsilon}\nu\kappa\rho\alpha\iota\rho\alpha$). These remained adjectival, became traditional epithets of cattle, thus acquired the status of characteristic epic adjectives specifically meaning '-horned',²⁰ were transferred to ships, and are responsible for the semantics and limited distribution of all subsequent adjectival compounds in $\kappa\rho\alpha\iota\rho\alpha$ / $\kappa\rho\alpha\iota\rho\omicron\varsigma$. Attic $\eta\mu\acute{\iota}\kappa\rho\alpha\iota\rho\alpha$ (the one and only $\kappa\rho\alpha\iota\rho\alpha$ compound that is completely independent of the Homeric instances) also began as a fem. possessive meaning 'consisting of half

¹⁹ In the long run, this view of the relationship of Myc. *-karaor-* and post-Myc. $\kappa\rho\alpha\iota\rho\alpha$ can be maintained whether the Myc. compounds are possessive or determinative.

²⁰ That is, the compounds in $\kappa\rho\alpha\iota\rho\alpha$ became synonymous with those in $\kappa\epsilon\rho\alpha\omicron\varsigma$, but only by having been semantically specialized.

the accouterments of the head (of a sacrificial victim)', was substantivized, and serves as the name for a particular $\epsilon\rho\acute{\omega}\sigma\upsilon\nu\omicron\nu$ in its most precise usage.

The Myc. r -stem can only be interpreted semantically in light of what seems indicated by the later $\kappa\rho\alpha\iota\rho\alpha$ compounds. It would therefore appear best to suppose that $\kappa\alpha\rho\alpha\omicron r$ - basically means 'part, feature etc. of the head'. Beyond this, only speculation is possible (cf. § 69.2 below).

68.1 Descriptively, then, this substantive may be analyzed as $\hat{k}rh_2-es$ - plus an $-(e)r$ -formant:

$\hat{k}rh_2-es$ - 'head'²¹ $\rightarrow \hat{k}rh_2-s-(e/o)r$ 'part, feature, accouterment of the head'

It is therefore an apparent instance of a substantival secondary denominative derivative, formed with a suffix $-(e)r$ -, and with an exocentric semantic relationship to its basis. More specifically, it may be said to have a locative ('thing in/on/at the head') or partitive ('part of the head') sense.

This descriptive situation is already enough to disfavor the further analysis of this item as a secondary neuter $r/(n)$ -stem. Simple r/n was occasionally used as a secondary denominative formant (cf. § 54.3), but never, it would appear, with exocentric function.²²

68.2 An $-(e)r$ -formant that does have a function appropriate to the present case is one which does not provide nom.-acc. neuter forms within a heteroclititic paradigm. This is the $-(e)r$ - of some archaic-looking locative formations.²³ Clear examples are:

²¹ A derivational relationship $\hat{k}erh_2-s$ 'horn' $\rightarrow \hat{k}rh_2-s-(e/o)r$ 'horn' would also be a theoretical possibility to look into. But although such a scheme would provide for an unobjectionable (though unilluminating) analysis of the Homeric $\kappa\rho\alpha\iota\rho\alpha$ compounds, it would leave the formal and semantic features of $\kappa\alpha\rho\acute{\alpha}\rho\alpha$, $\kappa\alpha\rho\alpha\rho\omicron s$, and L. *cerebrum* completely untouched.

²² Cf. above §§ 9.4 with note 3, 54.3 with addendum and note 17. Also note 15 to part IIa. In the small number of cases in which a nominal stem X is found beside a formation $X + r/(n)$, we seem to have either

1) two independent primary deverbative derivatives with different meanings (§ 54.3 with note 17), a situation which is not comparable to the present case.
or 2) one of the infrequent instances in which an r/n -stem (with endocentric function, however,) has been derived from another substantive. This does not help us here either.

²³ Cf. §§ 50.3 ff. with note 65 (Part IIIb).

1) *dheġh-(ō)m-* 'earth' (cf. § 50.3) beside *dhġh-(e)m-er* 'in/on the earth' (cf. Av. *zamarā-guz-/zəmar-gūz-* 'hidden in the earth')

2) RV root noun *van-* (g. pl. *van-ām*, loc. pl. *vám-su*) 'tree, wood, forest' beside *van-ar-* 'in the wood/forest' (RV *vanar-śád-*, *vanar-gú-*)²⁴

3) *h₂eys-ōs-/h₂us-s-* 'dawn' (RV *uṣāḥ/uṣ-*, Hom. ἠώς, L. *auror-a*) beside *h₂us-s-er* 'at dawn, early' (RV *uṣar-búdh-* 'awake early', Gk. ἦρι 'in the morning, early' < ἦρι < *h₂us-s-er-i*).²⁵ Also to be noted here are some derivatives specifically of this locative in *-(e)r-(i)*:²⁶ Hom. ἦρι-ος 'with the dawn', αὔρι-ον 'tomorrow',²⁷ and probably αὔρ-α 'fresh air/breeze of morning';²⁸ RV *usr-á-* 'at/with the dawn' (in *usrá-yāman-* 'with an early departure, setting out early'; substantivized fem. *usr-á* 'daylight, dawn'—cf. Lith. *aušrà* 'first light').

68.3 The most probable interpretation of these forms, first offered by Bartholomae,²⁹ is that they show a locatival formant *-er*, parallel to locatival *-en* (cf. §§ 50.2 ff.: *dhġh-m-én* 'on earth', *ġhġim-en* 'in winter', *g^hémbh-en* 'in the depths'). This is especially suggested by the observation that these apparent *r-* (and *n-*) stem forms as such are hardly found at all except as locatives.³⁰

For Greek ἄρη 'mist, fog', P. Kiparsky³¹ has suggested convincingly a pre-form *ausēr* and an etymological connection with ἠώς 'dawn' (< *ausōs*). As to the details of this connection, however, there remains a problem. There is no question that the *-(e)r* formant of ἄρη (accepting Kiparsky's analysis) is to be identified in some way with the *r*-stem (*uṣar-*, ἦρι etc. as above) that is so well-represented here.³² But it would appear that that *r*-stem is best paralleled (cf. *dheġh-om-* : *dhġh-(e)m-er*, *van-* : *van-ar-* above), and best accounted for (distributionally), if it is taken to reflect the *s*-stem (*h₂eys-ōs-*)/*h₂us-s-* 'dawn' plus an *-er* that was originally locatival only. Thus *h₂us-s + er*³³ 'at dawn'. It will there-

²⁴ Cf. again note 65 to Part IIIb; also Mayrhofer *KEWAi* 3, 139.

²⁵ Cf. § 50.5 with note 70 to Part IIIb (Peters *Untersuchungen*, 32 ff.).

²⁶ Cf., e.g., Chantraine *Formation*, 34 f. and following note.

²⁷ Strictly speaking, both of these derivatives are ambiguous between *-ri-jo-* and *-ri-o-*.

²⁸ Most recently Peters *Untersuchungen*, 34 with reference to Kiparsky, *Language* 43, 626.

²⁹ *BB* 15, 25 ff.

³⁰ Occasionally, other case forms are back-formed to them—e.g. RV g.-abl. *usr-áh*, voc. *uṣar*, acc. pl. *usr-áh*: all much less frequent than the original *s*-stem forms. Cf. also note 67 to Part IIIb.

³¹ *Language* 43, 624 ff.

³² This point too is made by Kiparsky (note 31 just above).

³³ PIE **h₂usser* > *h₂user*. Cf. § 57.6 with note 28.

fore not do to reconstruct two independent paradigms $h_2e\mu s-\bar{o}s$ and $h_2(e)\mu s-\bar{e}r$ that simply share the same root and happen to be more or less synonyms;³⁴ and strictly speaking, ἠώς 'dawn' and ἄρη 'mist' are not synonymous in any case.

68.4 One could, however, easily see an exocentric semantic relationship between ἠώς 'dawn' and ἄρη 'mist, dimness',³⁵ first and foremost the characteristics of dawn. Functionally, the case may be looked upon as parallel to that of 'earth' and 'human being' (§ 50.3), where the situation can be represented as:

$dh\acute{e}gh-\bar{o}m$	} 'earth'	
$dh\acute{g}h-m-$		
loc. $dh\acute{g}h-\acute{e}m$ ($k\acute{s}ám-i$)		'on earth'
loc. $dh\acute{g}h-m-\acute{e}n$ ($j\acute{m}án$)		'on earth' → $dh\acute{g}h-m-\bar{o}n$ ($\acute{z}mu\bar{o}$, $guma$)
loc. $dh\acute{g}h-(e)m-er$ ($z\acute{e}mar-$)		'on earth' ' (found) on earth' > 'human being'

In similar fashion, one could think of:

$h_2\acute{e}\mu s-\bar{o}s$	} 'dawn'	
$h_2\mu s-s-$		
loc. $h_2\mu s-\acute{e}s$ (RV $u\acute{s}ás-i$)		'at dawn'
loc. $h_2\mu s-s-er$ ($u\acute{s}ar-$ etc.)		'at dawn' → $h_2\mu s-s-\acute{e}r$ ($\acute{a}rh\bar{o}$)
		'(found/occurring) at dawn'
		> 'mist, dimness etc.'

The explicit proposal, then, is that an *-er* locative, like an *-en* locative (§§ 50.3–.7), could serve as the basis of a substantival derivative without suffix. The function of such a derivative is to refer to something as 'found in/on/at' whatever was denoted by the noun from which the *-er* or *-en* locative is itself derived.

68.5 To return to the question of Greek $\kappa\rho\bar{\alpha}h(\epsilon/o)\rho-$ 'thing in, on the head' (*-karaor-* / $\kappa\rho\alpha\iota\rho\alpha$ §§ 60–67), it is immediately apparent that there is complete formal and functional symmetry between $h_2e\mu s-\bar{o}s$ - ($\eta\acute{o}s$) 'dawn' : $h_2\mu s-s-\acute{e}r$ ($\acute{a}rh\bar{o}$) '(found) at dawn' and $\acute{k}rh_2-es-$ 'head' :

³⁴ Kiparsky's discussion (note 31 above) at least admits the (mis?)interpretation that his own view is exactly this.

³⁵ So Kiparsky (note 31 above) on the basic meaning of ἄρηρ.

$\hat{k}rh_2-s-\acute{e}r$ (-*karaor*-/- $\kappa\rho\alpha\iota\rho\alpha$) '(found) in/on the head'. Nor is it even absolutely necessary to assume that an *-er* locative $\hat{k}rh_2-s-er$ 'on the head' ever actually existed. It is perfectly possible to operate with a marginally generalized *-ēr* suffix:

$h_2(e)\mu s-(\acute{o})s-$: loc. $h_2us-s-er$: $h_2us-s-\acute{e}r$ '(found) at dawn'
 $\hat{k}rh_2-es-$: \longrightarrow : $\hat{k}rh_2-s-\acute{e}r$ '(found) on the head'

To this, in turn, could be compared:

$dh(e)\hat{g}h-(\acute{o})m-$: loc. $dh\hat{g}h-m-en$: $dhgh-m-(\acute{o})n-$ '(found) on earth'
 $\kappa\omega\lambda\omicron\nu$ 'leg' : \longrightarrow : $\kappa\omega\lambda\acute{\eta}\nu$ 'thigh' (§ 50.6)
 $\kappa\omega\lambda\acute{\eta}\nu\epsilon\varsigma$ 'bones of the leg'

There is no real question of an actual *-en* locative to a thematic substantive like $\kappa\omega\lambda\omicron\nu$.

69.1 If the simplex that underlay *-karaor-* (and $\kappa\rho\alpha\iota\rho\alpha$) was in fact a hystero-kinetic $\hat{k}rh_2-s-\acute{e}r/\hat{k}rh_2-s-r$ 'head-accouterment', the most straightforward further analysis of the Myc. second compound member would be that of seeing here a simplex *-ēr* : compound *-ōr*. For *seremo-karaor-*, which is probably determinative, this would imply a situation like the one seen in $\pi\alpha\tau\acute{\eta}\rho$ 'father' : $\mu\eta\tau\rho\omicron-\acute{\pi}\acute{\alpha}\tau\omega\rho$ 'mother's father'—namely a transfer to a determinative compound of the morphological characteristics original in possessives.³⁶ Since amphikinetic formations usually³⁷ generalize \acute{o} grade throughout the oblique in Greek

³⁶ Cf. note 17 above. But it is not really clear whether the suffixless derivatives of *-en* and *-er* locatives envisioned here should be supposed to have had hystero-kinetic or amphikinetic paradigms in the very first instance. One might suppose, however, that the antiquity at least of amphikinetic inflection in derivatives of this type is fairly well guaranteed by PIE $(dh)\hat{g}h(e)m-\acute{o}n$ 'human being', and it could be argued further then that hystero-kinetic-looking instances of such derivatives (the $-\acute{e}n$ type presupposed by Gk. $\kappa\omega\lambda\acute{\eta}\nu$) are items that have switched from amphikinetic to hystero-kinetic—a phenomenon not limited to the delocative derivatives in question in any event (cf. Peters *Untersuchungen*, 166).

Following this line one step further, it might then be supposed that the locative $h_2us(s)-er$ 'at dawn' originally produced an amphikinetic $h_2e\mu s(s)-\acute{o}r$ (with or without an eventual pre-Gk. $h_2us(s)-\acute{o}r$) 'mist', and that the hystero-kinetic paradigm that finally turns up in $\acute{\alpha}\eta\rho$ is the result of a rearrangement—possibly favored by $\alpha\acute{\iota}\theta\eta\rho$ and/or $\acute{\alpha}\sigma\tau\eta\rho$.

Mycenaean *-karaor-* could thus point either to an amphikinetic $\hat{k}rh_2s-\acute{o}r$ simply used as such as a second compound member or to a hystero-kinetic $\hat{k}rh_2s-\acute{e}r$ that shows bahuvrihi morphology (amphikinetic inflection) in this determinative compound.

³⁷ The generalization of lengthened-grade \acute{o} from the nom. sg. in amphikinetic paradigms (e.g. $\delta\mu\acute{\omega}\varsigma/\delta\mu\acute{\omega}\varsigma < dm\acute{o}\tilde{\omega}x/dm\acute{o}\tilde{\omega}-os$) also occurs, but much more rarely.

(-τωρ / -τορ-; ἥως / ἥόη-ος > ἥοϋς ‘dawn’; πειθώ(ι) / πειθόιος > πειθοϋς ‘persuasion’; -ων / -ον- etc.), Mycenaean *-karaor-e* (inst. sg.) is perhaps best taken as representing a stem *-krāhōr-*.

69.2 The exact meaning of *seremo-karaor-e*, however, is still unclear. We might now assume that determinative *seremo-* / *krāhōr-* is a ‘head-accouterment of a *seremo-*’ but it is impossible to go further without knowing what a *seremo-* is.³⁸ It is at least certain that it is something that did (or could) indeed have a head (*seremo-karaapi*). And ‘*seremo-horn*’ is one obvious possibility for *seremo-* / *krāhōr-*.

The place-name *ono-/krāhōr-* also allows only for conjectures. One possibility is that of accepting the usual interpretation of *ono-* as representing ὄνος ‘ass’ and taking the name as a determinative */ono-krāhōr-* ‘donkey’s headgear’—i.e., perhaps, ‘donkey ears’. This would seem no less meaningful than ‘donkey head’. But one might just as well think of something like */oīno-krāhōr-*, *oī* being regularly spelled *o* at Pylos (e.g. Py. *ko-to-na* vs. Kn. *ko-to-i-na* for κτοίνα). This would at least yield a more immediately sensible place name. The *oīno-* would be identified with οἶνη ‘the 1 or ace on a die’ (Achae., Zen.), also οἶνος (Poll.), and cf. Hsch. οἶνίζειν τὸ μονάζειν κατὰ γλῶσσαν. This, of course, corresponds in turn to L. *ūnus*, Irish *oen* ‘one, single’ etc.

Invoking the semantics of the Homeric *-κραίρα* compounds (‘-horned’), *oīno-krāhōr* could then be taken either as a determinative ‘one horn’ or a possessive ‘single-horned’. And with a further assumed development of ‘horn’ to ‘crest’—like that of κορυφή (§ 5; κορύπτω ‘butt’ vs. Hom. οὔρεος ἐν κορυφῇς etc.)—the name might be interpreted as ‘single crest(ed)’. None of this may be insisted upon.

69.3.1 If the Myc. *-karaor-* compounds can be reconciled with a non-neuter *r*-stem $\hat{k}rh_2s-ér$ ‘(thing) on the head’, the next question is whether the same can be done for the compounds in *-κραίρα*, which ought to represent, as already noted (§§ 65 f.), the same *r*-stem in specifically feminine possessive compounds with an additional *-ih₂* suffix. The question is then the expected structure taken on by a simplex consonant-stem substantive when that simplex appears before *-ih₂* in the kind of compound just described. There is little evidence that can really help settle this question [*].

³⁸ A semantically plausible reading and interpretation is *selmo-* ‘seat’ (cf. σέλμα), which would incline one to see *selmo-krāhor-* and *selmo-krāha(t)-* as technical terms for two kinds of ornamentation—‘seat-horns’ and ‘seat-heads’ (?). Cf. *Docs*², 343 and 501. But the orthography is against it.

In the first place, there are a number of cases (or rather classes of cases) in which a bahuvrihi has no special feminine at all. One and the same form serves both as masc. and fem. For example, the bahuvrihis in $-\omega\nu$ and $-\mu\omega\nu$ (with second members based on n -, r/n -, and *men*-stems) systematically lack a special feminine. A couple of randomly chosen examples might be ἦδε ... εὐλείμων (*H. Apoll.* 529) and ἀπείρονα γαῖαν (*H.* 446 etc.). But these are matched in Vedic and Avestan by, e.g., *vāja-bharman*- 'gain-bringing' (fem. *RV* 8.19.30), *rapśád-ūdhan*- 'with swollen udders' (fem. *RV* 2.34.5), *Av.* *vərəzi- čašman*- 'with energetic eyes' (fem. *Y.* 13.29), and *pouru- baēnuan*- 'amounting to many myriads' (fem. *Yt.* 13.65, *V.* 20.4). To return to Greek, the abnormality of the pattern masc. $-\omega\nu$: fem. $*-αινα$ for bahuvrihis may be seen in the Homeric pair πρόφρων : πρόφρασσα, where the epic language had recourse to a superficial analogy with the virtually synonymous ἐκών : ἔκασσα. One could consider the possibility that the lack of a special feminine in bahuvrihis that are consonant-stems as masculines and neuters was originally the normal situation.

69.3.2 Although there are in fact many cases of feminine bahuvrihi in $-ih_2$ to be found in the individual languages, their appearance is inconsistent. One may contrast the Vedic fem. *rapśád-ūdhan*- as above with *smád-ūdhn-ī*- 'with an udder' (both: *ūdhar/ūdhn*-) or the Avestan fem. *pouru- baēnuan*- as above (: *baēnuarə/baēnuan*- 'myriad') with *haptō- karšūuair-ī*- 'consisting of (the) seven regions' (: *karšūuarə/karšūuan*- 'region'). In Greek, an analogous contrast applies, for instance, between fem. (*Hes. Th.* 350) θεοειδής 'with the appearance of a god' (: εἶδος) and ἡριγένεια 'with early birth' (: γένος) etc., or fem. (*I* 505) ἀρτίπος 'sound-footed' and κυανόπεζα 'k.-footed'. Feminine function for compounds of the type θεοειδής is matched by systematic feminine use of the corresponding Vedic type *su-mānas*- 'well-disposed', *a-repās*- 'spotless' etc. Once again the question arises of whether (or to what extent) the protolanguage formally distinguished feminines from masculines at all in these compounds.

This means that in practically any given case where a fem. bahuvrihi with $-ih_2$ (or rather its outcome) is found in one of the individual languages, it is at least potentially the result of an innovation. Nor is it difficult to see, for example, how a specifically feminine *haptō-karšūuair-ī*- in Avestan (cf. above) could have been made to a completely expectable masc. $*X-karšūman$ - 'having *X* region(s)'. The model would simply have been the non-compound possessive adjectives of the type

masc. $-yan-$ / fem. $-yar-i-$ (Av. $ašāuuan-$ / $ašāuuir-i-$ 'righteous' = Ved. $ṛtāvan-$ / $ṛtāvair-i-$ etc.), where a formal masc./fem. distinction is undoubtedly old. (Ved. $pīvan-$ / $pīvar-i-$ 'fat' = Gk. $\pi\acute{\iota}(F)\omega\nu$ / $\pi\acute{\iota}(F)\epsilon\iota\omicron\alpha$). Similarly, neither the contrast between Av. $-karšuuair-i-$ (: $karšuuarə$ / $karšuan-$) and Ved. $-ūdhn-i-$ ($ūdhar$ / $ūdhn-$) nor the agreement between fem. Av. $-baēuuan-$ and fem. Ved. $-ūdhan-$ would be any particular problem if the fem. bahuvrihis in $-i-$ are considered innovations that are thus free to have followed different models. One would then take an analogous view (recent, differing processes) of the contrast, within Vedic itself, shown by $jánma$ / $jánman-$ 'birth' : RV $su-jánman-i-$ 'giving good birth' and $nāma$ / $nāmn-$ 'name' : AV $pāñca-nāmn-i-$ 'with five names'.

69.3.3 It would appear, then, that the structure displayed by a simplex consonant stem, when appearing before (a reflex of) $-ih_2$ in an exclusively feminine bahuvrihi, was at least subject to considerable rearrangement (re-derivation) in any given language—even if its very creation was not an innovation of that language in the first place. In the present case, this means that there are very few *a priori* morphological constraints on the reconstruction of $-κρα\iota\alpha$, an example of the type of compound just now in question.

At any rate, the pre-form that involves the fewest additional problems by far is a Gk. $-krāhr̥ja$ (standardly supposed anyway³⁹), reflecting (or as if reflecting) $-k̑rh_2sr-ih_2$. A simplex $*krāhēr$ '(thing) in, on, at the head' (cf. Myc. compounds in $/-krāhōr-/$ § 69.1) beside a feminine bahuvrihi second member $-krāhr̥-ja$ is exactly parallel to Av. $pitar-$ 'father' beside the compound feminine personal names $vañhu-$, $srūtāt-$, and $ərədat-fəδr-i-$ as well as the simply adjectival $hu-fəδr-i-$ 'of good ancestors'. Nor is a $-krāhr̥-ja$ particularly disfavored by anything in Greek. Although $\acute{\alpha}\nu\eta\rho$ 'man' : ($\chi\upsilon\delta\iota-$ etc.) $\acute{\alpha}\nu\epsilon\iota\omicron\alpha$ ($-er-ih_2$) might lead one to expect $*krāhēr$: $X-krāher-ja$, this is excluded on phonological grounds. Such a preform cannot have yielded Attic ($\eta\mu\acute{\iota}-$) $\kappa\rho\alpha\iota\alpha$ at all, and would make for the shakiest possible interpretation of Homeric $\kappa\rho\alpha\iota\alpha$. On the other hand, a pair like $\chi\epsilon\eta\rho-$ (> $\chi\epsilon\iota\omicron$) 'hand' : $-\chi\epsilon\eta\rho-\iota\alpha$ ($\acute{\iota}\omicron-\chi\epsilon\acute{\alpha}\iota\omicron\alpha$ 'with arrow(s) in hand')⁴⁰ presents an $-ar-ja$ (apparently < $-r-ih_2$) that is not so easily explainable that it may be considered expectable in any sense.

³⁹ e.g. Frisk *GEW* 2, 5 and Chantraine *DELG*, 577 as one possibility.

⁴⁰ Cf. Peters *Untersuchungen*, 223 ff.

69.3.4 The reconstruction *-krāhr-ia* does, however, raise one phonological question. It is obvious that *-κραῖρα* has undergone the Greek rule by which sequences of the type(s) *-a/oRḷ-* were metathesized to *-a/ojR-*. But this rule will not have applied to *-krāhrḷia* until the *h* had already been eliminated. In other words, *-κραῖρα* would seem to suggest that *h* was eliminated before the *ḷ*-metathesis. Against this chronology, however, it can be argued that the metathesis, which is reflected in all the dialects, should presumably be earlier than the regular treatment of *-hr*-clusters, which differs among dialects (*-hr* > *-rr* in Lesb. and Thess.; > *-r*- with compensatory lengthening elsewhere).

An easy solution presents itself. As we have seen, *-κραῖρα* exists (by definition) only as a second compound member (§ 65.6). Here we may recall that PIE *potnih₂* 'mistress' becomes Gk. πόντια as a simplex, but has a different development as a second compound member: *-potnih₂* > *-potnḷia* > *-ponḷia* > (δέσ)-ποινα. In exactly parallel fashion, it could be suggested that compositional *-kṛh₂sr-ih₂* became *-krāhrḷia* in the very first instance. Then, just as the *-tnḷia* of second member *-potnḷia* underwent a very early reduction to *-nḷia* (clearly before *-onḷi-* > *-ojn-*), it would seem reasonable to suppose that the *-hrḷia* (or *-srḷia*?) of *-krāhrḷia* (*-krāsḷia*?) was analogously simplified to *-rḷia*, yielding *-krārḷia* (like *-ponḷia*). The next step would have been *ḷ*-metathesis, whence *-krārḷia* (> *-poḷina*). Finally, *-krārḷia* became *-kraḷira* by Osthoff's Law,⁴¹ which preceded the fronting of *ā* > *ḗ* in Ionic and Attic.⁴² This requires that compositional *-krāhr-ia* already existed at a rather early date, but there does not seem to be any decisive reason for denying it.

70.1 We may complete the discussion of the *-r* and *-ro/ā* derivatives of *kṛh₂-es* 'head' by returning to the second group: Latin *cerebrum* 'brain, skull' and Greek *κραῖρα* 'head' plus the *-κṛāros* compounds (§ 61). As already noted (§§ 61–62), these formations ought to be analyzed in light of the *r*-stem (*-karaor-* / *-κραῖρα*). Under the interpretation just suggested for that formation, this means that the *-ro-* and *-rā* derivatives are best taken, if possible, as having something to do with the locative formant in *-er* (type Av. *zamar-* 'on earth' < *dhgh(e)m-er* etc. § 68.2).

70.2 It is probable in any event that these *-er* locatives could serve not only as the basis for substantives derived without suffixes (*h₂us(s)*)

⁴¹ See Peters *Untersuchungen*, 306 ff. on Osthoff's Law in Greek.

⁴² So most recently Peters *Untersuchungen*, 256, citing Ion. μεσαμβρίη < *mesāmriā*. Cf., e.g., Schwyzler GG 1, 279.

-er 'at dawn' > $h_2us(s)-\tilde{e}r/h_2us(s)-r-$ 'mist, dimness'—§ 68.4), but also for adjectival derivatives in -o- with (adnominal) locative meaning. An example has already been mentioned (§ 68.2):

cf.⁴³ $\left\{ \begin{array}{l} h_2us(s)-er \text{ (RV } u\check{s}ar-) \text{ 'at dawn'} \rightarrow h_2us(s)-r-o- \text{ (RV } u\check{s}r\acute{a}-) \text{ 'early'} \\ h_2us(s)-er-i \text{ (}\eta\check{\rho}\iota\text{)} \text{ 'at dawn'} \longrightarrow \eta\check{\epsilon}\rho\iota-\omicron\varsigma \\ h_2us(s)-r-i \text{ (RV } u\check{s}r\acute{\iota}) \text{ 'at dawn'} \rightarrow \alpha\check{\upsilon}\rho\iota-\omicron\nu \text{ 'in the morning'} \end{array} \right.$

It is to be expected that adjectives of this type would occasionally be substantivized. For example, one might imagine a development like:

$dh\check{g}h-(e)m-er$ (Av. *zamar-*) 'in/on the earth' $\rightarrow dh\check{g}h-(e)m-r-o-$ 'in/on the earth' (adj.), 'belonging to the earth' and, with substantivization, $dh\check{g}h-em-r-o-$ 'part/section of the earth' > 'field' (Hitt. *gimra-*).⁴⁴

Such cases might have served as the point of origin of the "locative" and/or "partitive" -ro-formation (§ 62.2) that can be descriptively identified in *nas-ro-* 'at/in/part of the nose' (Lith. *nasraĩ*, MLG *nus(t)er* 'nostril') or RV *rathirá-* ('riding, carried) in a chariot' (to which cf. further *rathar-yāti* 'ride in a chariot'?⁴⁵). That a -ro-suffix with this function came to exist at a reasonably early date is plausible in any case.

70.3 For present purposes, it only remains to point out that L. *cerebrum* can be explained as an example of exactly the same kind:

$\hat{k}rh_2-es-$ 'head' $\rightarrow \hat{k}rh_2-s-r\acute{o}-$ 'in/on/at the head' (adj.) $\rightarrow \hat{k}erh_2sro-$ 'thing in/on the head, head-accouterment' > 'brain, skull'

If the origin of the -ro-formation involved here is the one just suggested, the identity of function shown by the substantive $\hat{k}rh_2s-\tilde{e}r$ 'head-accouterment' (-*karaor-/κραιφα*) and (substantivized) $\hat{k}erh_2sro-$ 'id' (*cerebrum*) is practically a matter of definition. They are both accommodated at once even if no locative $\hat{k}rh_2s-er$ is actually reconstructed.

⁴³ But cf. note 27 above (§ 68.2).

⁴⁴ Cf. § 62.2 with note 5 above.

⁴⁵ Mayrhofer *KEW*Ai 3, 39 infers a *rathar-* 'chariot' from *ratharyāti*. But *rathirá-* (*ratH-ra-*) 'in/on a chariot' and OP [u]-*raPara-* 'with good chariot-warriors' (implying *raPara-* 'chariot-warrior' < *ratH-ara-* 'in/on a chariot') would seem to represent a pair of locative adjectives in -(e)ro-, and it is thus tempting to classify them as adjectival derivatives (in -(e)ro-) of a locative in -(e)r which could at the same time have served as the basis of *rathar-yá-* 'be (carried) in a chariot'. AV *rathar-vī-* is the name of a snake, and it is thus difficult to be sure exactly what it means.

70.4 For Greek $\kappa\epsilon\phi\acute{\alpha}\lambda\eta$ (Hsch.), it goes without saying that the feminine (in $-\acute{\alpha}$) of an o -stem adjective is also capable of being substantivized. When this happens, the resulting substantive often has an abstract or collective sense. When, more specifically, the adjective in question is itself a denominative adjective, the substantivized feminine (collective) can end up with a meaning that is practically identical to that of the substantive from which the (denominative) adjective was derived in the first place.⁴⁶ For example:

temH-es- 'darkness' (Skt. *támas-*, Av. *tamah-*) → *temH-s-ro-*⁴⁷ 'dark' (OHG *dinstar*), fem. *temH-s-re-h₂*, substantivized to *temHsreh₂-* 'darkness' (Skt. *támisrāḥ* = L. *tenebrae*), difficult to distinguish semantically from the original *temH-es-*.

Among the adnominal locative adjectives in $-r + o-$ with which we are now concerned, a parallel case would seem to be:

h₂us(s)- 'dawn' → *h₂us(s)-er* 'at dawn' → *h₂us(s)-r-ó-* 'early' (adj., fem. *h₂us(s)-r-éh₂* and, with (abstract/collective) substantivization *h₂us(s)-r-eh₂* 'daylight, dawn' (RV *usrā-* and, with new radical full grade, Lith. *aušrà*), for all practical purposes a synonym of *h₂(e)us-(ō)s-* itself.

This allows $\kappa\epsilon\phi\acute{\alpha}\lambda\eta$ 'head' to be analyzed as the substantivized (collective) feminine of the same adjective whose neuter lies behind L. *cerebrum*:

$\hat{k}rh_2-s-r + \acute{o}-$ 'in/on/at the head', fem. $\hat{k}rh_2-s-r + \acute{e}h_2$ → collect. subst. $\hat{k}rh_2sreh_2-$ > $\kappa\epsilon\phi\acute{\alpha}\lambda\eta$ 'the head'

The retention in Greek of $\hat{k}rh_2-s-r + eh_2$ ($\kappa\epsilon\phi\acute{\alpha}\lambda\eta$) beside $\hat{k}rh_2-s(+n)-$ ($\kappa\epsilon\phi\acute{\alpha}\lambda\alpha\tau-$), ultimately its derivational base and eventually synonymous, is exactly matched by *támas-* : *támis-rā-*, *us-* : *usrā-* etc. in Vedic. The relationship only looks different at first sight because $\hat{k}rh_2-es-$ has in the meantime been expanded to $\hat{k}h_2-s + n-$ (§§ 57 f.).

70.5 The most economical way of analyzing the compounds in $-\kappa\epsilon\phi\acute{\alpha}\lambda\eta$ (§ 61) will therefore be simply to take them as ultimately re-

⁴⁶ Although no real discussion is possible here, it will be obvious that there are further distinctions and specifications to be made. For example, the situation just described is not true of all types of denominative adjectives, and the semantics of the original substantive (person vs. thing etc.) also play a role.

⁴⁷ This $-ro-$ adjective, one of a large number of denominatives of the structure $x-ro-$ that mean 'having, exhibiting, consisting of (etc.) X ' is to be distinguished from the delocative $-r + o-$ type ($h_2us(s)r-o-$, $dhghemr-o-$, $\hat{k}erh_2sr-o-$) now under discussion.

flecting as their second member the $-\hat{k}rh_2sro-$ which is itself only an expected compositional form of simplex $\hat{k}rh_2sreh_2$ (καράρα). If the compounds ναύ-κληρος ('ship's) captain' and *λαῖφό-κράρος 'chief of the people' (whence Boe. PN Λακκαραιδας) are themselves old, one could simply assign them to the (bahuvrihi) type RV $\acute{a}śva-prītha-$ 'on the back of a horse', $viśvānara-$ '(found etc.) among all men, universal'. In that case ναύ-κληρος may be interpreted as having originally meant 'at the head (καράρα) of the ship' and *λαῖφό-κράρος 'at the head of the people'. Simplex καράρα beside the bahuvrihi second member -κράρος would then be formally parallel, in all formal respects, to pairs of the familiar type δίκη : ἄδικος.

Perhaps, however, this cannot be insisted upon. It is theoretically possible that these two particular compounds were formed as determinative compounds. In that case, it would be necessary to make further assumptions. On the one hand, -κράρος (still taken as the compositional form of καράρα) might have been transferred from some (unattested!) possessive compound(s) to these determinatives much as the -κράηνο- of possessive ἐκατόγ-κρανος 'hundred-headed' etc. (§§ 49.3, 65.4) came to be used in a couple of determinative compounds like ὠλέ-κρανον 'elbow' and κιό-κρανον 'capital (of a column)'.⁴⁸ Still less likely, one might assume that $\hat{k}rh_2s(e)r-$ (§ 68.5) partly developed to a personal substantive '(the one) at the head' and it is this that appears (with compositional $-o-$) in these two determinative compounds (cf.? ἡμί-ανδρο-⁴⁹ as a determinative with compositional $-o-$).

As a second choice altogether, though it requires an otherwise unknown and unnecessary simplex substantive, it could be supposed that $\hat{k}rh_2s-r+o-s$ 'at the head', the masculine of the same adjective as gave rise to *cerebrum* and καράρα, was substantivized in Greek to a word for 'chief, captain' (cf. Doric κάρανος § 49.4). This, then, would itself appear as the second member of ναύ-/*λαῖφό-κράρος, interpreted then as determinative compounds from the outset.

71. The conclusions drawn in this section of the discussion (§§ 60 ff.) are

1) The $r-$ and $ro-$ stems found here are derivatives of $\hat{k}rh_2-es$ 'head'.

2) They both have exocentric function, more specifically locatival, in relation to their base. The $r-$ stem is a substantive meaning 'thing

⁴⁸ Cf. Risch, *IF* 59, 267.

⁴⁹ Cf. Risch, *IF* 59, 23.

in/on the head' while the $-ro$ -stem is an adjective '(located) in/on the head'.

To these may be added an inference concerning the relative chronology. It has been suggested that the eventual PIE paradigm of the h_2 -stem word for 'head' was $n-a \hat{k}r\bar{e}h_2$ / obl. $\hat{k}rh_2-es$ - (§§ 57 f.). In Greek, the oblique $\hat{k}rh_2-es$ -, the derivational basis of $-karah-or$ -, $\kappa\alpha\rho\alpha\eta-\rho\bar{\alpha}$ etc., would have presumably become unavailable as a source of further derivatives as soon as it was expanded with endocentric $-n$ - (§§ 57 f.). This implies that the $-r(o)$ - derivatives in question were formed before this remodelling of the oblique. This causes no problems, however, because the $-r(o)$ -formations may be plausibly taken as inherited in Greek and Latin while the creation of oblique $\hat{k}rh_2s + n$ - could be an independent development of Greek (§ 58.5). Furthermore, the words for 'hornet' give some grounds for believing that exocentric $\hat{k}rh_2s-er$ - 'headgear' is a PIE formation (§§ 73 ff.).

72. The scheme given above (§ 59) could be expanded to the following:

V. 'Hornet'

73.1 The words for 'hornet' in Latin, Germanic, and Balto-Slavic are also traditionally referred to the general group of substantives denoting 'head' and 'horn'.¹ They may be treated as a sort of appendix, since at most, of course, they are derivatives of such words. In principle, there is no immediate reason not to maintain this traditional view. However, a problem of a different kind does arise as soon as the connection is looked into in detail.

The whole idea here is that the insect is named after a (prominent) body-part. But a hornet has both a relatively large head and prominent projections (antennae) on it. Assuming that the name is to be taken as a possessive in the first instance, it is not absolutely clear whether we are looking for an analysis that will yield a formation meaning 'having headgear' or one that will mean 'having a head' (which, pragmatically, is the equivalent of 'having a big head'—cf. the type Gk. γάστρων 'having a big belly', L. *capito* 'big-headed' etc.). Since the morphology of words for 'horn' is actually quite distinct from that of 'head' terms, this could make a difference.

But it is also conceivable that the name is not possessive in the first place, but rather a *pars pro toto* denomination (e.g. Lith. *dygllys* 'thorn' and 'stickleback', OE *scill* 'shell' and 'shell-fish'). In this case, what is required is a formation reflected by the word(s) for 'hornet' that should simply have meant 'headgear, antenna(e)' (less likely, 'head') in the first instance.

In addition, the relevant forms are different enough in their details that it is not impossible that they represent two independent formations. But as soon as this possibility is taken into account, it can no longer even be assumed that all of them originally meant exactly the same thing. One or more may be possessive (either from 'head' or 'horn') while another may be a *pars pro toto*, the insect being open to re-naming from a different point of view at any time. If anything, this general problem is a consequence of there being too many possibilities, given the number of formations and derivational processes that may be

¹ Cf., e.g., Pokorny *IEW*, 576.

invoked together with a lack of certainty about what the reconstructions ought to mean. Less general problems may be pointed out as they arise.

73.2 Because of these considerations, there is a proviso to the following discussion. We will assume that the words for ‘hornet’, all things being equal, name the creature after its antennae since these (subjectively) are somewhat more characteristic than its head. In addition, it will be assumed that the terms are possessive since in general this seems more common than the use of a part for the whole, and in particular it is paralleled by the names for horned animals. Finally, it is at least sure that $\hat{k}erh_2$ -es- ‘head’ and $\hat{k}erh_2$ -s-(e)r(o)- ‘headgear’, the only probable bases for the ‘hornet’ derivatives,² are not themselves found at all in most of the relevant branches (Gmc., Balt., Slav.). This allows a strong presumption that the words for ‘hornet’ do in fact have an inherited starting point. On these grounds, in turn, the interpretation that allows for a more direct relationship between plausibly inherited formations may be favored over its alternative, since it would offer the advantage of not unnecessarily multiplying the items attributed to the protolanguage.

74.1 The simplest-looking situation is that of Latin, where the texts offer only one form of the name: *crābrō* (-ōn-is etc.), which points to the pre-form *crās(r(ō)n-*. Even so, there is more than one way of analyzing this within the terms set by the available inherited formations (§§ 60 ff.) and their probable meanings, and the assumptions (§ 73.2) under which we are operating. One possibility is to see here a $\hat{k}erh_2$ -s- ‘head’ plus “locative” -r + o- (type Vedic *us-r + a-* ‘early’ § 70.2), yielding an adjective $\hat{k}erh_2$ -s-ro- ‘on the head’, substantivized to a word for ‘antenna(e)’, and then suffixed with possessive -Hon-³ : $\hat{k}erh_2$ -s-ro-Hon- ‘having antennae’ > ‘hornet’. But since it is precisely this kind of -ro- adjective that seems to underlie *cerebrum* ‘brain, skull’ (§ 70.3), and since this formation both shows a new root *e*-grade and fails to support

² An analysis that took $\hat{k}erh_2$ -s ‘horn’ as its point of departure would be somewhat shaky from the start, since it cannot be shown that this existed in PIE—or anywhere outside Greek (§§ 44 f.). But even so, the point being made here would still stand, since Germanic and Balto-Slavic ‘hornet’ words that were derived from $\hat{k}erh_2$ -s ‘horn’ would have to be considered archaisms if their derivational basis is itself not reflected in any of the relevant languages.

³ Hoffmann, *MSS* 6, 35 ff.

the meaning 'antenna(e)' for the substantivized adjective, it is perhaps better to adopt the other obvious possibility.⁴

74.2 This amounts to starting with the $-(e)r$ -stem substantive $\hat{k}rh_2s\text{-}er$ 'headgear' (§§ 68.4 f.), as in Myc. $-karaor$ -/Hom. (etc.) $-\kappa\rho\alpha\upsilon\rho\alpha$, and assuming a relatively archaic possessive adjectival derivative $\hat{k}rh_2s\text{-}r\text{-}\acute{o}$ 'having headgear' (type $\hat{k}ery\text{-}o$ 'having horns' > L. *ceruos* 'hart' § 4). From this adjective would then have been made an $-on$ -stem substantivizing derivative: $\hat{k}rh_2s\acute{r}\acute{o}$ 'having headgear/antennae' → $\hat{k}rh_2sro\text{-}on$ - (*crabro*) '(the one) having antennae' > 'hornet' (cf. *catus* 'sharp, shrewd': *Cato* 'shrewd one' etc.⁵). From the Latin point of view, then, this would be the preferred analysis.

74.3 Finally, we may note that the Romance reflexes⁶ of *crabro* indicate a certain amount of instability in the shape of the word. A second *a* is introduced in a large number of forms. This, in addition to occasional forms with initial *sc*- (e.g. Ital. *scarabone*) points to partial contamination with *scarabaeus*/*scarafaeus*⁷ 'beetle'.

What will prove to be more important, however, is that most of the Romance reflexes show dissimilation of the r - r in *crabro*: either to l - r (e.g. Lomb. *galavron*) or to r - l (e.g. Gen. *gravalon*) or to $zero$ - r (e.g. Portug. *cambrão*) or to r - $zero$ (Ital. *scarabone*). The possibility of analogous dissimilations will arise in the Germanic and Balto-Slavic material.

75.1 In Germanic, there are forms of two basic types to be accounted for. The first, in its simpler form, appears in Dutch *horzel*, reflecting a Germanic *hursla*- most directly. This, if projected back yet further, is best taken as if from a $\hat{k}rh_2slo$ -, since it is only $\hat{k}(e)rh_2\text{-}(e)s$ - that may be safely assumed (§§ 40 ff.), and not $\hat{k}(e)r\text{-}(e)s$ -. In addition, $\hat{k}rh_2slo$ - can straightforwardly be set beside the $\hat{k}rh_2s\text{-}r\text{-}o$ 'having headgear/antennae' that seems to lie behind Latin *crabro* (§ 74.2). The Germanic form, however, does show $-lo$ - rather than $-ro$ -. But these two alternate in a number of categories⁸ (e.g. $\mu\alpha\kappa\rho\acute{o}\varsigma$ 'long, tall', L. *macer*

⁴ The reconstruction of a possessive $*\hat{k}rh_2s\acute{r}\text{-}Hon$ - 'having headgear' (i.e. $\hat{k}rh_2s\text{-}(e)r$ - 'headgear' plus $-H(o)n$ -) is excluded on phonological grounds.

⁵ Cf. *Len*², 361.

⁶ M-L 2293.

⁷ M-L 7658.

⁸ But by no means, of course, in all categories. Diminutives in $-(e)lo$ - (the type of L. *porculus*, Goth. *barnil*(\bar{o}) etc.), for example, do not have a class of $-(e)ro$ - diminutives beside them.

'thin' vs. Hitt. *makla(nt)*- 'thin': OIc. *setr* 'seat' < *sedro*- vs. OE *setl* (n.) and Goth. *sittls* (m.) 'seat' < *sedlo*-⁹). Therefore, no essential distinction need be recognized between *ḱr̥h₂sro*- and *ḱr̥h₂slo*- 'having antennae' in any event. But it might even be supposed in this particular case that an inherited *ḱr̥h₂sro*- was simply dissimilated (*r-r* > *r-l*) at some stage, with certain Romance forms (§ 74.3) invoked as a parallel. The *l* of eventual *hursla*- would thus result from a purely phonological development. In any event, there is little difficulty in analyzing *horzel* as a substantivized possessive adjective in *-o*-, itself derived from *ḱr̥h₂s-(e)r*- 'headgear'; and comparing this to the Latin form allows us to regard *ḱr̥h₂sr-o*- 'having antennae' as a PIE formation in its own right.

75.2 Gmc. *hursla*- is supported by an additional form. MHG *horlitze* (f.) 'hornet' descriptively seems to reflect a more complex *hurzl-it-jō(n)*-, where one way, perhaps among others, of dealing with the root vocalism *horl*- (vs. expected **hürl*-), as my colleague Warren Cowgill points out to me, is to assume that *horlitze* was influenced by forms like OHG *hornaz* (§ 75.3). The *-it*-formant¹⁰ is easily paralleled in this semantic category (cf. Thur. *wewez-chen* 'wasp', with *wab-it(a)*- vs. the *waf-s-ō* of OHG *wafsa* etc.; *-ita*- in OHG *elbiz/albiz* 'swan', OHG *chrebiz*/OS *krēbit* 'crab'; *-itō(n)*- in OE *efete* 'lizard' (?); *-itjō*- as such possibly in OE *hymnett* 'hornet'—see below). Germanic suffixes of the general type *-at*-, *-it*-, *-ut*- etc. have clearly spread among animal names, and are probably old only in a few cases (e.g. OIc. *plpt/elptr*, OHG *albiz/elbiz*, OE *ælbitu* 'swan': RCS *lebedī* etc. 'id'; OHG *hiruz* etc. 'hart': *κόρυθος* 'crested (lark)'—§ 5). It would thus seem both possible and desirable to reduce Dutch *horzel* and MHG *horlitze* to a single *hursla*-, analyzed as above.¹¹

75.3 Beside this *-la*-formation, *n*-forms are also found: OHG *hornaz* (*hur(z)nata*-) m., *hornuz* (*hur(z)nuta*-) m.;¹² MHG *horniz* (which may not require a separate *hur(z)nita*- : cf. MHG *horlitze* above); OE *hymnett* (*hur(z)nitjō* or *-atjō*) f. and, with simplification of *-tt* to *-t*, consequent switch from the *-jō* type to the *-ō* type, and addition of *-u* in

⁹ Cf. as another obvious example *-tro*- and *-dhro*- beside *-tlo*- and *-dhlo*- as formants of nomina instrumenti (examples in Brugmann *Grdr*², 2.1, 339 ff. and 377 ff., e.g.).

¹⁰ Brugmann *Grdr*², 2.1, 467; Specht *Ursprung*, 229.

¹¹ The Late Latin glosses *furslones*, *fruslones* (*Ahd Gl* I, 334) together with reflexes of the type Fr. *frelon* (M-L 4194; Wartburg 16, 271) are said to point to a Frank. *hruslo* < *hurslo* which would be further evidence of Gmc. *hurzla*-/ *hursla*-.

¹² There was probably a *hornūz* at some point too, to judge by early ModHG *hornauss*.

the nom. sg. also *hyrnetu/hirnitū/hurnitu*.¹³ It is not surprising that the dental formant (-it-) that appears with the *l*-formation appears here too (but with more variety: -at-/-ut-/-it-), and again it need not be considered very old.

The forms of the type *hornuz*, *hyrnett* are generally¹⁴ taken to represent an inherited *n*-stem *hurzn-* which is compared to the Balto-Slavic *n*-stem for 'hornet' (Lith. *širšuō*, ORuss. *širšeni* etc.). This implies two different but synonymous Germanic formations (as is descriptively the case for B-S as well), *hursla-* and *hurz(a)n-* that have both been expanded by the -it-/-at-/-ut- that is productive in this semantic area. In principle, there is nothing seriously wrong with this. But neither is it really necessary. OS *hornobero*/OHG *hornbero* 'horn-bearer', a compound of simple *hurna-* 'horn' (§ 3.4) used as a name for the hornet, shows that the insect was open to (re)namings based on the normal word for 'horn' (metaphorical for 'antenna'). This, however, makes it entirely possible that a WGmc. form of the type *hurlit-* (< *hurzlit-* § 75.2) was partially remade by folk-etymology to *hurnit-* (whence, perhaps, *hyrnett* in particular). The presence of alternatives in -at- and -ut- is paralleled and expectable (e.g. OIc. *plpt* with -ut- vs. OHG *albiz* / *elbiz* with -it-, OHG *chrebazo* 'crab' with -at- vs. *chrebiz* / OS *krēbit* 'id' with -it-). Comparison with the B-S *n*-stem, therefore, remains a definite possibility, but from the point of view of Germanic itself, it has the disadvantage of requiring two completely independent words for 'hornet'.

76.1 This brings us to the Balto-Slavic forms. Lithuanian presents an extraordinary number of formations. The following all seem to be found: *širšas* (dial.), *širša* (dial.), *širšys*, *širšė*, *širšinas*, *širšalas* (dial.), *širšilas*, *širšlys*, *širšolas*, *širšulas*, *širšuolas*, *širšuolis* (dial.), *širšuō*, *širšuonas*, *širšunas*, *širšonas*. It stands to reason that these do not all represent anything inherited or otherwise useful for our purposes. Latvian has a somewhat smaller number of forms: *sirsis*, *siřsins*, *sirsilis*, *siřsenis*, *siřs(e)nis*, *sirsuonis*, *sirsūnis*. The only correspondent attested in Old Prussian is *sirsilis*.

Slavic has only three formations: RCS *s(t)rūšeni*/ORuss. *širšeni*, Czech. *sřeň*, OPol. *sierszeń*, etc. (an -e/on-stem or its immediate replacement), Bulg. *stūršel*/*štūršel* (an -elo-stem), and SCr. *sřsljēn* (apparently a complicated stem, perhaps in -il(i)jen-). In addition, the in-

¹³ See Campbell OEG, 238 f.

¹⁴ Pokorny IEW, 576 etc.

tonation in Baltic (Lith. *šīš-*) and Slavic (SCr. *šř-*) is consistent with the *ķrh₂s-* suggested by Latin *crāb(ro)*.

76.2 In Baltic, the forms that have no outside correspondents at all may safely be left out of account. Since a *-lo-*formation is found both in Germanic and Slavic and an *-e/on-*stem is at least Slavic (§ 75.3), the exclusively Baltic by-forms include only the Lithuanian *-a*, *-as*, *-ys* and *-ė* forms plus Latv. *sīsis*. But these are easily explained as innovations analogically produced on the model of the large number of Lith. and Latv. sets of synonymous animal and insect names that typically include one or more of these formations—very often beside *l* or *n* suffixes of one sort or another.¹⁵

Space need not be given here to the enumeration of all the potential models for each of these Baltic creations. But if, for example, a form like Latv. *vapsene* ‘wasp’ owes its stem-formation in large part to *sīrsenis/siřs(e)nis* ‘hornet’, as seems practically certain (cf. Lith. *vapsà* = RCS *osa*, L. *uespa* etc.), it is difficult to rule out Lith. *vapsà* (in particular perhaps among other things) as the model for Lith. *šīřša*. In similar fashion, Latv. *sīsis* beside Lith. *šīřlīs* is precisely parallel to cases like Latv. *ķirķis* ‘cricket’ : Lith. *kirklys* ‘id’; and Lith. *kirmuō* : *kirmė* : *kirminas* ‘worm’ (beside *kirmis*, probably the original formation—cf. Skt. *ķyṃi-*, Ir. *cruim*¹⁶) is matched, descriptively, by *šīřsuō* : *šīřšė* : *šīřšinās* (beside Latv. *sīsis* once again). It is unnecessary to belabor the point. The word for ‘hornet’ is only one of the cases in which Lith. and Latv. have created sets of synonymous formations. It is, however, one of the largest sets.

76.3 Even among the forms that may be vaguely classified as *l* or *n* formations, there is a good deal of variety of detail, and this is probably to be viewed along similar lines. If a *šřšlo-* corresponding exactly to Dutch *horzel* was inherited into Baltic, its eventual appearance in Lith. in the remodelled form *šīřlīs* is not surprising in view of the substantial number of *-līs* formations (both deverbative and denominative) that serve as animal names there (beside other, synonymous formations): e.g. *būblīs* ‘bittern’, *burblys* ‘heath-cock’, *kirklys* ‘cricket’, *kirlīs* ‘kite’, *čirklys* ‘cricket’, *kranklys* ‘raven’, *krauklys* ‘crow’, *tutlys* ‘hoopoe’,

¹⁵ Specht (KZ 59, 213–298) discusses some of the relevant forms. But to see *šīřšė* vs. *šīřsuō*, for example, as reflecting an actual *-ē(n)* nominative beside an actual *-ō(n)* nominative (as Specht does on p. 252) seems somewhat risky.

¹⁶ Cf. Fraenkel LEW, s. v. *kirmis* for further Balto-Slavic material.

and others (mostly *nomina agentis* from onomatopoetic verbs, but cf. also the type *kirslys* 'grayling' : *kéršas* 'speckled').¹⁷ Similarly, forms like *širšalas* and *širšilas* for 'hornet' may either be considered remodelled from **širšlas* by assimilation to *bāmbalas* 'bee' (to which cf. Latv. *bambuls* 'beetle' plus Gk. βομβύλη 'bee'), *vābalas* 'weevil' (Russ. dial. *veblica*, OHG *wibil* etc.), *mašalas* 'gnat', *bimbālas*/*bimbilas* 'gadfly' etc.,¹⁸ or they could be entirely new formations, but on the same models. The same can be said for the remaining *l*-forms (*-uolas*, *-ulas*, *-olas*), so that it is not at all difficult to imagine that the Baltic languages (if they inherited it) might have replaced a simple *-lo*-stem corresponding to the Slavic and Gmc. forms by a series of words that have more productive suffixes. And simple *-las*/*-la* is in fact not common in the relevant semantic area.

76.4 As to the group made up of *širšuō* plus *-uonas*, *-ūnas*, *-onas* in Lithuanian (and *-uonis*/*-enis*, *-ūnis* in Latv.), it is the *n*-stem *širšuō*, of course, that represents the most archaic form of the word. An *n*-stem is practically assured by the Slavic correspondents (§ 76.1), and cannot easily be explained as an innovation since unextended *n*-stems are rather unproductive in general (even in Lithuanian),¹⁹ and *širšuō* in particular is not even synchronically derivable there. The by-forms in *-uonas*, *-ūnas* and even *-onas*, however, are fairly predictable once given *širšuō* itself.²⁰

77.1 Information useful for the further analysis of the B-S *n*-stem is not readily available. In older Lithuanian, there are two different paradigms for masc. *n*-stems. Some show the ablauting *-uō*/*-eñs* etc. that later becomes the only normal pattern,²¹ while others show an invariant *-uo*-vocalism:²² *akmuō*/*akmeñs* 'stone' vs. *pirmuō*/n. pl. *pirmuones*

¹⁷ Leskien *Bildung*, 309 ff. (= 455 ff.).

¹⁸ Leskien *Bildung*, 326 ff. (= 472 ff.), 336 f. (= 482 f.).

¹⁹ Specht, *KZ* 59, 213–98; Stang *VGBS*, 225; Otrębski II, 175 f.

²⁰ Specht, *KZ* 59, 233 ff. (esp. 225 f., 240, 251, 259), the idea being that *n*-stems with *-uo*-throughout function as *nomina agentis* (in a wide sense of the term) and that they were extended to yield the formations *-uonas* and *-uonis*. These, in turn, overlap in function with the agent nouns in *-ūnas* and *-onas*, leading to the productive creation of by-forms and thus sets of virtual synonyms in *-uo* and/or *-uonis* and/or *-uonas* and/or *-ūnas* and/or *-onas*.

²¹ e.g. Senn, 138.

²² Cf. Specht, *KZ* 59, 234 ff., 241 ff., who sees a purely formal distribution: *-uō*/*-uones* for primary agent nouns vs. *-muō*/*-meñs* for others. But this forces Specht to some unlikely further hypotheses—e.g. (p. 242) *rudas* 'reddish' : **rudmuō* > *ruduō*/*-eñs*

'first-born'. Ultimately this distinction may well rest on inherited *-C-e/on-* and *-Ce/on-* vs. *-o-(o)n-* and *-o-H(o)n-* (substantivizing and possessive derivatives of thematic formations²³). But it seems clear that there has been some redistribution along semantic lines. Those masculine *n*-stems that are synchronically transparent substantivizing formations and denote active and/or animate beings²⁴ continue to reflect *-o-on-* and appear with the invariant *-uo(n)-* inflection (type *pīrmas* 'first : *pīrmuō* 'first-born' as above, cf. *paláidas* 'free' : *palaiduo* 'libertine' and others). But the same inflection was transferred to some agent nouns that had simple *-on-* in the first instance. For example, *geluō* '(insect's) sting(er)', a deverbative agent noun (: *géliti* 'stab, sting'), appears to reflect a *g^uel-(o)n-* to judge by *δέλλιθες* : *σφήκες* (Hsch.) < *δελ-v-ιθ-* (cf. *ὄρ-v-ιθ-* 'bird' : Goth. *ara*, Hitt. *haran-* 'eagle').²⁵ The same formation probably underlies *βελόνη* 'point, needle' as well. This would lead one to expect a Lith. paradigm *geluō/-eñs* from the beginning (cf. *ἄκμων* 'anvil' : Skt. *ásman-* 'rock' etc. : *akmuō/-eñs* 'stone'). The appearance of forms of the type *geluoni* (acc. sg.)²⁶ would therefore indicate that invariant *-uo(n)-* inflection has spread in such a case from substantivizing formations to an agent noun (both personal).

But the reverse development is also found. Lith. *ruduō* 'autumn' can hardly be taken as anything but an original substantivizing derivative of *rūdas* 'reddish brown'. Except for the root vocalism, *rūdas* : *ruduō* is the exact equivalent of L. *rufus* 'red(-haired)' : *Rufō*. The paradigm of *ruduō*, however, is of the *-uō/-eñs* type, which makes it clear that the word for 'autumn'—since it is neither animate-substantivizing nor an agent—was removed from the *pīrmuō* category and adopted the inflection appropriate to non-personal and non-agent formations,

'autumn'. The phonology is made questionable by *raumuō* to *raūdas* 'red'. And cf. further on here in § 77.1.

²³ Similarly, Jasanoff, *Beeler Studies*, 379.

²⁴ Cf. footnote 22 just above.

²⁵ In my own view, it is probable that substantivizing *-(o)n-* derivatives of *o*-stem derivational bases originally inflected *-o-ō(n)/-o-on/-o-n-* and thus never showed *-C-n-* anywhere in their paradigm (Schindler, *Studies in Greek, Italic, and IE Linguistics Offered to L. R. Palmer*, ed. A. Morpurgo Davies and W. Meid. 1976, 351). But even so, it would be difficult to argue that the *g^uel-n-* of *δέλλιθες* conclusively excludes a substantivizing formation all by itself, since it is always possible to suppose that the *-C-n-* oblique stem-shape of primary amphikinetic *n*-stems (with *-ō(n)* nominatives) was sometimes analogically transferred to substantivizing *-(o)n-* derivatives (which also had *-ō(n)* nominatives). Cf. Peters *Untersuchungen*, 160 and 165 ff.

²⁶ Specht, KZ 59, 235.

which were mainly *-muō/-meñs* (*tešmuō* 'udder' etc.; *augmuō* 'growth' etc.), but included, at least descriptively, a few in simple *-uō/-eñs* (e.g. *vanduō* 'water', reflecting most directly a *uo(n)d-ōn-* cf. Goth. *watō*).²⁷

There are, to be sure, sub-tendencies and vacillations, but the point to be retained is that invariant *-uo(n)-*inflection is not always a sure indication of an original *-o-(H)on-*formation, and *-uō/-eñs*, conversely, need not exclude it if the semantics allow for the possibility of a switch. Consequently, nom. pl. forms like *širšones/širšounes* (= *širšuones*)²⁸ do not permit the definite reconstruction of *-o-(H)on-* since it is conceivable that this is a case like *geluo(n)-* 'stinger'. Comparison with Latv. *sīrsenis* vs. *sīršuonis*, indicating both paradigms side-by-side, makes the case perfectly ambiguous. One could suppose that an *-o/en-*formation (*sīrsenis*) is original and that *širšuō(n)-/sīršuonis* arose partly by a secondary reinterpretation of the word as an agent noun (specifically to *šīr-šti/šīršti* 'be angry'?²⁹) and partly because of *geluō*. Alternatively, it is possible that *širšuō* has an etymological *-o-(H)on-* and *sīrsen(is)* is the innovation, always possible in any case, and especially easy for 'hornet' since it is not sure that the word was ever anything in Baltic but an isolated and unanalyzable formation synchronically.

77.2 The case is similarly ambiguous in Slavic. On the one hand, the type represented by OCS *graždane* 'townspeople' probably has a substantivizing *-(j)o-on-*formation as its ultimate starting point,³⁰ and retains the stem-shape in *-(j)an-* that is expectable under this analysis. Outside of this one semantically restricted category, however, Slavic (unlike Lithuanian) does not show distinct masculine *n-*stem types that may be traced to an earlier distinction between *-o/en-*stems and *-o/en-*stems. It would therefore seem that whatever formations of the Lith. *pirmuō* type (*prHmo-on-*) were inherited from Balto-Slavic would

²⁷ A similar switch from substantivizing *-ōn-* to *-o/en-* may have occurred in the case of the **mažuō* 'childhood' presupposed by *iš mažēñs* 'from childhood', which clearly goes with *māžas* 'small'. It might be that *māžas* gave rise to *mažuō* 'small one, child' and that *iš *mažuones* was originally an expression just like Latin *a puero* 'from boyhood'. One could suppose that **mažuō* in such a phrase was re-interpreted as the abstract 'childhood', was thus removed from the substantivized/agent category, and that it was thus open to the influence of e.g. *augmuō, -meñs* in particular (whence **mažuō, mažēñs*).

²⁸ Specht, KZ 59, 238 f.

²⁹ It is not clear (to me at any rate) to what extent the difference in intonation might have interfered with such a synchronic re-analysis.

³⁰ Cf. most recently Jasanoff, *Beeler Studies*, 379.

necessarily have become "normal" *en*-stems if they were kept at all, and if they were not of the *graždane* type semantically.

A possible example of a formation with this history is OCS *mladen(īci)* 'baby', R (dial) *mólodenī* 'youngster' etc.,³¹ if this is a substantivizing *-on-* derivative to a thematic Slavic *moldū* (OCS *mladū* 'young', R *mólodū* 'young'—cf. OPr. voc. pl. m. *malđai*/acc. *malđans* 'young'). This, in turn, would point to a *moldho-*³² beside the *młdho-* indicated by Greek μάλθη 'wax-and-pitch caulk' (substantivized fem. adj. 'soft') and the *meldho-* of Irish *meld/mell* 'pleasant, agreeable'.³³ For the apophonic alternation cf. *h₁reudho-* (OÍc. *rjóðr* etc.) : *h₁rouđho-* (Go. *raups* etc.) : *h₁rudho-* (Lith. *rūdas*/Latv. *ruds*). In this interpretation, the Slavic reflexes of *moldho-* 'tender' (*mladū* etc.) beside *moldho-on-* 'baby, child' (*mladen-īci* etc.) would find a precise parallel in Greek *μαλθος 'soft' (cf. μάλθη above) : μάλθων, -ωνος 'weakling' (*młdho-* : *młdho-on-*). In that case, the indirectly attested Slavic **moldy/molđen-* would represent the transfer of a substantivizing formation originally in *-ōn-/ōn-* to the *-e/on-* ablauting type that became the only normal pattern there.

For the Slavic 'hornet' forms, this means that it is not possible to be sure whether they reflect possessive *-o-Hon-* (from an *o*-stem substantive), substantivizing *-o-on-* (from an *o*-stem adjective), or a simple masc. *-e/on-* stem of one derivational type or other. Strictly speaking, a *-Hon-* possessive formation from a consonant stem is not ruled out either. The result of all these considerations, therefore, is only that the Baltic and Slavic *n*-stem for 'hornet' allows no more room for the further analysis of the formant than does L. *crabro*.

78.1 We are left with apparent reflexes of three formations which, if mechanically projected back, would yield:

- 1) *ĕ₂h₂slo-* (Gmc., Balt.)
ĕ₂h₂selo- (Bulg.)
- 2) *ĕ₂h₂srōn-* (Latin)
- 3) *ĕ₂h₂sōn-* (Balt., Slav., possibly Gmc.)

³¹ For additional relevant forms cf., e.g., Berneker *SEW* 2.1, 71.

³² The traces of a *u*-stem seen in OCz. *z mladu*/Pol. *za młodu* could ultimately reflect PIE *młdu-* 'soft' (Ved. *mṛdū-*, Gk. βλαδύς etc.).

³³ Cf. also Gmc. *mildija-* 'gentle' (Goth. *mildeis*, OÍc. *mildr*, OE *milde*), which stands to the *meldho-* of the Irish form as *niwija-* 'new' (Goth. *niwis*) stands to *neyo-* (L. *novus*, Gk. νέος etc.).

There are only a few additional factors relevant to an overall interpretation of these forms:

1) They are probably to be taken as ultimately belonging with $\hat{k}y h_2$ -es- 'head' and more specifically $\hat{k}y h_2$ -s-(e)r(o)- 'headgear' (§§ 60 ff.) because these formations are plausibly PIE while $\hat{k}er h_2$ -s 'horn' cannot be counted on outside Greek (§§ 40 ff. cf. n. 2).

2) Our working hypothesis is that their analysis as possessive formations is preferable to seeing them as *pars pro toto* terms, and more specifically that the word(s) for 'hornet' originally meant 'having headgear, antennae' (§ 37.2).

3) It is better to take the various 'hornet' terms as having a common starting point than as completely independently formed, because there is no other trace of the formation(s) they seem to presuppose (no. 1 above) in Germanic or Balto-Slavic (§ 73.2).

4) The question therefore becomes that of attempting to recover the PIE word for 'hornet'. This, in turn, suggests reconstructing a single formation, if at all possible, in order to avoid having to assume unnecessary PIE items (§ 73.2).

5) Latin *crabro* excludes $\hat{k}y h_2$ s-r- 'head-gear' plus possessive -H(o)n- (n. 4) and disfavors $\hat{k}y h_2$ s-r+o- 'headgear' plus possessive -H(o)n- (§ 74.1). Nor is there any obvious way of supporting $\hat{k}y h_2$ s-r- 'headgear' plus simple -e/-on- if the resulting $\hat{k}y h_2$ s-r+e/on- is expected to have meant 'having headgear' (no. 2 above). The Latin form is therefore most easily analyzed as $\hat{k}y h_2$ -s-(e)r 'headgear, antenna(e)' → $\hat{k}y h_2$ -s-r-ó- 'provided with antennae' → $\hat{k}y h_2$ -s-r-o-on- 'hornet' (§ 74.2).

6) Gmc. *hursla*- (and *hurzlīt*-) may easily be combined with *crabro* by assuming that the inherited possessive adjective **hursra*- (< $\hat{k}y h_2$ s-r-o- 'having antennae') was dissimilated to *hursla*- and was substantivized without further suffixation (§ 75.1).

78.2 Since Baltic forms like Lith. *širšlys* and Latv./OPr. *sirsilis* are easily taken as remodellings of a simple -lo-stem (§ 76.3), they may be given exactly the same interpretation as Dutch *horzel*. Bulgarian *stūršel* can also be accommodated with little difficulty—and in more than one way. If it represents the outcome of a genuinely old $\hat{k}y h_2$ ser-o- (with dissimilation of r-r to r-l at some point), then this $\hat{k}y h_2$ ser-o- would be to $\hat{k}y h_2$ sr-o- (> *horzel*) exactly as *kren-to*- 'horned' (OHG *hrind*) is to *krm-to*- 'horned' (OE *hrȳper*)—§ 4.3. But just as *širšalas*, one of the Lith-

uanian 'hornet' forms, may well represent an original simple *-lo-*stem influenced by *vābalas* 'weevil', *mašalas* 'gnat', *bimbalas* 'gadfly', and *bāmbalas* 'bee' (§ 76.3), there is some possibility that the apparent *-elū* of Bulg. *stūršel* results from the partial assimilation of a *-lo-*formation to the *-elā* of OCS *būčela*, Russ. *pčelá* etc. 'bee'.

The most idiosyncratic Slavic form is SCr. *sřlžen*. To be sure, this could be the outcome of some such preform as Slavic *sřšl(ī)jen-*, but it seems pointless to rehearse the various more or less theoretically possible historical analyses of a back-projected stem of this sort, since it is so much more complex than any other word for 'hornet' found in Slavic or elsewhere. Consequently, it might be better to suppose, as Warren Cowgill suggests to me as at least one possibility, that the form ultimately represents a *ķh₂slo-* (cf. Dutch *horzel* directly and Lith. *šřšlīs* etc., Bulg. *stūršel* indirectly—§§ 75.1, 76.3, 78.2 above) that was first remodelled to a Slavic *sřšlī* (cf. Latv./OPr. *sirsilis* § 76.1) or *sřšlji* (cf. the type CS *bodlji* 'thorn, sting(er), quill'/SCr. *bōdalj* 'thistle, spike'), and was then assimilated to the *n*-stem that is the predominant formation in any event (§ 76.1). However this may be, the Serbo-Croatian form is probably the result of a fairly complicated and late series of developments restricted to this one language, and is thus best put to one side. This leaves Slavic evidence for a *sřšelū* and a *sřšen-*.

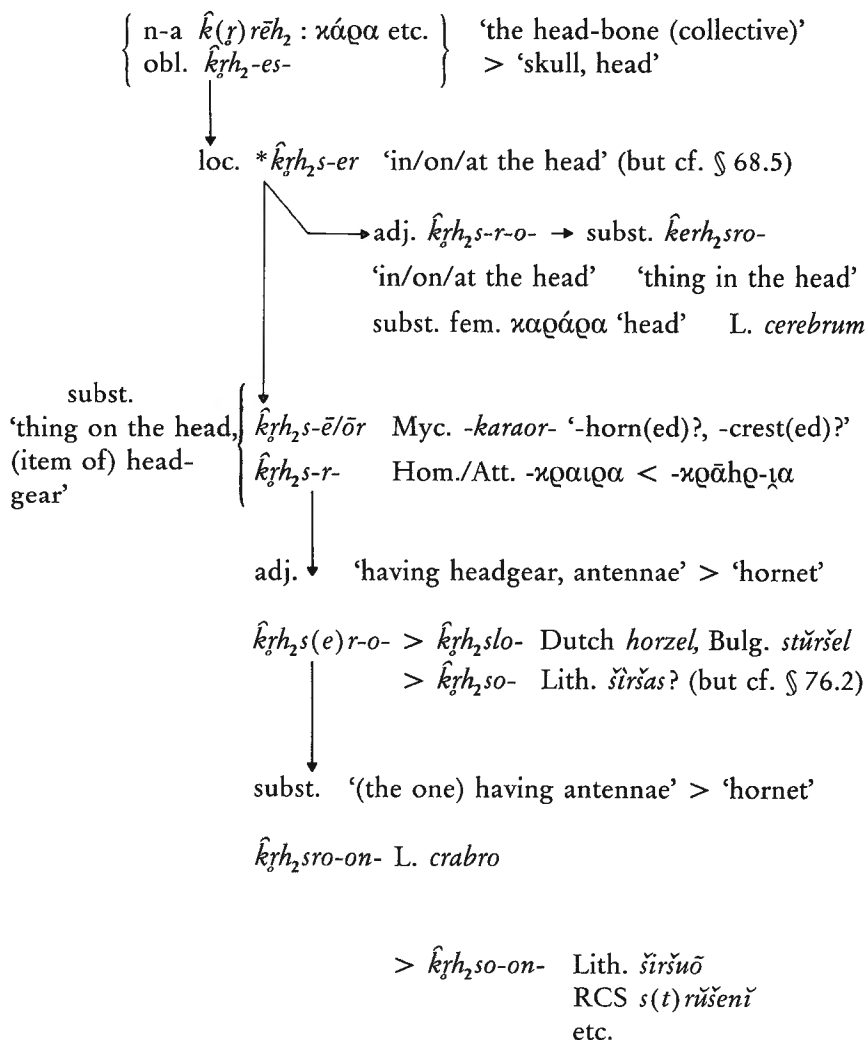
The inventory of 'hornet' terms thus reduces to a *ķh₂s(e)ro-/ķh₂sron-*, with or without dissimilation, and a *ķh₂sōn-* (Balt., Slav., possibly Gmc.). On general principles (§ 78.1, no. 4), one might well be reluctant to reconstruct two completely independent items here. More particularly, this would require that Latin (*crabro*) has an *n*-stem formation that has nothing directly to do with that of Baltic (Lith. *šřšuō* etc.) and most of Slavic (ORuss. *šřšenī* etc.). Furthermore, a descriptive B-S *šřšō(n)* could be analyzed in several ways, but none of the theoretically possible preforms (plus derivational histories) is quite satisfactory on the criteria (§ 73) adopted for this discussion, and within the limits imposed by the formations available as derivational bases.

Further than this it is not possible to go with any security. But it may be worth pointing out that instead of reconstructing a *ķh₂sō(n)* with one of several more-or-less plausible analyses, one might think of supposing that the *r-r* of the various outcomes of PIE *ķh₂sro-/ķh₂sron* were sometimes dissimilated to *r-l* (§ 78.1 no. 6, 78.2) and sometimes to *r-* zero (cf. L. *crabro* : Ital. *scarabone* in part—§ 74.3).³⁴ This would per-

³⁴ So too Lith. *šřšas* < *šřšro-*?

mit all the words for 'hornet' to stem ultimately from $\hat{k}rh_2s-r + \acute{o}$ 'having antennae', a possessive adjectival *-o-* derivative made on the locative exocentric substantive $\hat{k}rh_2s-(e)r-$ '(thing) on the head' (§ 68.5 ff.).

79. The 'hornet' formation may thus tentatively take its place in a schematic representation (cf. §§ 59, 72) of the overall situation as follows:



In this second set of parallel expressions, there is a strong possibility that a relatively well-entrenched $\overset{\gamma}{\sigma\tau\epsilon\nu\acute{\alpha}\chi\omicron\nu\tau\omicron} \gamma\upsilon\nu\alpha\tilde{\iota}\kappa\epsilon\varsigma \#$ has been modified in three ways to give three unique segments.

The resultant picture of these interrelationships would be something like the following:

$$\left\{ \begin{array}{l} \overset{\gamma}{\pi\lambda\acute{\eta}\theta\omicron\upsilon\sigma\iota} \acute{\rho}\acute{\epsilon}\omicron\nu\tau\epsilon\varsigma \# \\ \overset{\gamma}{\acute{\rho}\eta\gamma\nu\tilde{\upsilon}\sigma\iota} \acute{\rho}\acute{\epsilon}\omicron\nu\tau\epsilon\varsigma \# \end{array} \right\} \quad \left\| \begin{array}{l} \overset{\gamma}{\sigma\tau\epsilon\nu\acute{\alpha}\chi\omicron\nu\tau\omicron} \gamma\upsilon\nu\alpha\tilde{\iota}\kappa\epsilon\varsigma \# \text{ etc.} \\ \overset{\tau}{\acute{\alpha}\nu\epsilon\sigma\tau\epsilon\nu\acute{\alpha}\chi\omicron\nu\tau\omicron} \gamma\omicron\omega\tilde{\nu}\tau\epsilon\varsigma \# \end{array} \right\}$$

$$\overset{\gamma}{\sigma\tau\epsilon\nu\acute{\alpha}\chi\omicron\upsilon\sigma\iota} \acute{\rho}\acute{\epsilon}\omicron\upsilon\sigma\alpha\iota \# \longleftrightarrow \overset{\gamma}{\sigma\tau\epsilon\nu\acute{\alpha}\chi\omicron\nu\tau\omicron} \theta\acute{\epsilon}\omicron\upsilon\sigma\alpha\iota \#$$

From the vantage point of the full network of the relationships involved, the natural presumption must be that the composer of Π 391 proceeded as if dealing with the simplex participle $\acute{\rho}\acute{\epsilon}\omicron\upsilon\sigma\alpha\iota$. Seeing a re-arranged equivalent of ἐπι-καρ- $\acute{\rho}\acute{\epsilon}\omicron\upsilon\sigma\alpha\iota$ here consequently necessitates the following complex hypothesis: The composer of this passage wished to use this compound and wished to use it in participial form along with $\sigma\tau\epsilon\nu\acute{\alpha}\chi\omicron\upsilon\sigma\iota$ but encountered the obvious metrical difficulties (-καρρ $\acute{\epsilon}\omicron\upsilon\sigma\alpha\iota$). The solution adopted was that of removing the preverbs, using the rest according to the pattern suggested by simplex $\acute{\rho}\acute{\epsilon}\omicron\nu\tau\epsilon\varsigma$ on the one hand and $\theta\acute{\epsilon}\omicron\upsilon\sigma\alpha\iota$ on the other, and postponing the preverbs until the next line. This, however, did not put an end to the problems. There remained the question of how to versify the postponed ἐπι-κατ/καρ- in the next line, and the poet rejected certain ways of doing this (Here I simply repeat F's arguments):

1) metrical lengthening to ἐπὶκάτᾱ CC/ἐπὶκάτ' V was too abnormal

2) assimilation to ἐπι-κάμ' (μινύθει) was unacceptable because apocopated prepositions/(prev.) normally go together closely with what follows and therefore do not occur at syntactic joints.

3) restoration of the "underlying" ἐπι-κάτ' was not possible because κατ is not really the underlying pause-form after all, but rather a sandhi-form regular only before τ and θ; and in any case Homer does not have apocopated pause-forms.

The solution adopted for this second set of problems was that of using the assimilated -καρ- that would have appeared had ἐπι-καρ- $\acute{\rho}\acute{\epsilon}\omicron\upsilon\sigma\alpha\iota$ not been re-arranged by preverb postponement. Furthermore, this had the advantage of phonologically suggesting the compound in question in spite of the re-arrangement, and would also conform to Greek restrictions on permissible word-final consonants.

Whatever one may think of this hypothesis, it is in this form that it must be justified. But it is not always clear how this can be done. On some points the hypothesis would be difficult to defend, and on others we will never be in a position to judge. For example:

1) If, on the internal evidence of parallel Homeric line-segments, it seems that ῥέουσai (Π 391) has been dealt with as if it is the participle of the simplex, perhaps we should assume that that is what it is unless there is clear evidence to the contrary.

2) Why was the composer of Π 391–2 so eager to use this compound if, as far as we can ever know, it did not facilitate his task and, if anything, was rather difficult? There were apparently no readily adaptable traditional models that might have led someone to do this. In fact, ἐπι-καρ-ρέειν does not seem to have belonged to the epic dialect at all. But without usages that could have served as models, we lack a convincing explanatory device for the poet's surprising-looking choice.

3) As Forssman points out, the proposed (ἐπι-)καρ-ρέουσai ἐξ ὀρέων has its closest semantic and contextual correspondent in Δ 452, 454: ... ποταμοὶ κατ' ὄρεσφι ῥέοντες / ... / κρουνῶν ἐκ μεγάλων ... But might this not suggest that the ἐπι- could have been dispensed with entirely for all the difference it makes in the meaning? One could easily imagine a solution like: ... ῥέουσai / ἐξ ὀρέεσφι κάτω; and κάτω before μινύθει would be comparable to ... ὀφέλλει τῇ μινύθει τε # (Y 242). This would have avoided the problem of an apocopated preverb in pause, and κατα-ρρέειν is at least a demonstrably epic compound (unlike καρ-ρέειν).

4) The hypothesis makes considerable use of the metrical difficulties presented by (ἐπι-)καρρῥέουσai. But

a) does this itself not suggest a possible reason for the exclusion of the compound from Homeric use in those forms that would be difficult?

b) what is the status of preverb postponement in general as a metrical device in Homer?

c) How abnormal would the scansion ἐπι-καρ- / ἐπι-κατ(α)- really be? Forssman is surely right to point out that # ἐπίτονος (μ 423) is not sufficient in and of itself to suggest that any ἐπι at any place in the line could have undergone genuine metrical lengthening. But if this is taken in conjunction with # ἐπεὶ δὴ (2x *Il.*, 4x *Od.*), which would seem to be

the model (in some sense) for # ἐπίτονος, it becomes very difficult to take the position that it would have been utterly out of the question to have an acephalous

στενάχουσι ῥέουσai #

ἐπίκατ' ἐξ ὀρέων

—especially since this would have had the advantages of 1) moving the postponed preverbs closer to the verb 2) avoiding the problem of the apocopated preverb in pause.

d) Would a metrically lengthened *-ῥρειουσai really be inadmissible? Forssman argues that the absence of ῥειω- / -ῥειοντ- / ῥειου- (to ῥεF-) in Homer shows that some factor must have actually prohibited such forms despite the frequency of absolutely parallel-looking cases like πνείουσα (to πνεF-), πλείοντες (to πλεF-) etc. In addition, according to Forssman, a -ρειουσai would have spoiled an effect at which the poet was aiming—the parallel line-endings of Π 391 (... μεγάλα στενάχουσι ῥέουσai) and Π 393 (... μεγάλα στενάχοντο θέουσai). Neither of these points is conclusive.

As to the first of them, the absence of ῥειο- / ῥειω- forms no more proves that these were inherently impossible than an opposite case like the absence of πνέοντες (for which Homer only has metrically lengthened πνείοντες proves that ~ πνέοντες was impossible. The facts only permit the conclusion that as far as we can tell no poet ever found it desirable or necessary to construct a segment that solved the metrical problem of ~ ῥέῶ- / ~ ῥέῶ- by means of a technique (~ ῥέιῶ- / ~ ῥέιῶ-) that was available and frequently used for other verbs of identical structure. More specifically, we may just as well say that the versificational procedure employed in cases like ~ πλεῖν # (I 360), ~ πλεῖν # (μ 70) (vs. πνέοντ-ε(ς) / -ας ~ #) simply happens to be the same one that is used with the Homeric examples of ῥεοντες # (3), ῥέουσai # (1), ῥέοντε # (1), ῥέοντα # (1), ῥέοντος # (1/4), ῥέουσι # (1). If we lack a ῥείοντες ~ # or the like, this is no more telling than the observation that we lack a ~ πλεῖντες #.

This in turn makes it clear that the parallelism between Π 391 and Π 393 can be considered neither an effect for which the poet was necessarily striving in this passage nor a possible motivation for his rejection of metrical lengthening in ῥέουσai. The essential point is that 391 and (especially) 393 both seem to have been constructed on (interconnected) models already known to the composer of this passage (see above), and their parallelism would be an inevitable outcome of his

5) Even if the appearance of the apocopated preverb in the form -*χαρ'* would have certain very considerable advantages over -*χαμ'* and -*χατ'* (see above), it remains an apocopated preverb and its appearance at a syntactic break is therefore still an anomaly.

Finally, if anything further can be learned about the inner-epic status of the Π passage in question, this is perhaps best done by comparing Δ 452–4, another simile and closely comparable in content:

Δ 452 ὥς δ' ὅτε χεῖμαρροι⁵ | ποταμοί⁷ | κατ' ὄρεσφι ῥέοντες
 ἐς μισγάγκειαν⁵ | συμβάλλετον || ὄβριμον ὕδωρ
 κρουῶν ἐκ μεγάλων⁵ | κοίλης ἔντοσθε χαράδρης.

There is no serious question here of one passage showing evidence of having been directly modelled on the other in part or in general, for there is no basis for such a claim. Each passage doubtless had its own models and/or further associations. The only points to be made here are that 1) the Homeric repertory clearly had a way of talking about water “flowing down the mountains into ...” without resorting to unique re-arrangements that would at least have tested comprehension severely. And it cannot be that the use of an expression like the one seen here at Δ 452–3 was beyond the skill of the composer of Π 390–1. 2) ... ῥέουσai ≠ / ἐξ ὀρέων ἐπίκαρ⁵ is not only semantically compar-

able to ... ῥέοντες # / ἐς μισγάγκειαν⁵ |, but parallel in grammatical structure, interchangeable in metrical shape, and identical in positioning. In fact, it might not be too much to recognize a type of expression in:

ἐς μισγάγκειαν⁵ |
 # κρουνῶν ἐκ μεγάλων⁵ |
 # ἐς δ' ἄλλα πορφυρέην⁵ |

to which would belong various others (e.g. A 252 # ἐν Πύλῳ ἡγαθέη⁵ |, Γ 49 # ἐξ ἀπίης γαίης⁵ |, Λ 480 # ἐν νέμεϊ σκιερῷ⁵ |), but not very many. Segments of the shape – ∞ – ∞ – that consist of a preposition + noun ± modifier and occur in the position # ...⁵ | are not as common as might be expected, and not very many can be considered formulae in any reasonable sense, though there are a few: # Λῆμνον ἐς ἡγαθέην⁵ | at Φ 58, 79 together with Λῆμνῳ ἐν ἡγαθέῃ⁵ | at Β 722; extremely common # νῆας ἐπὶ γλαφυράς⁵ | (15x *Il.*); and some others. But it is clear that line-initial expressions of this metrical shape and syntactic content, even if not rigorously describable as formulae, were associated with one another by the poets of the tradition to some extent, for some are clearly modelled on others. Beside the frequent # νῆας ἐπὶ γλαφυράς⁵ | just mentioned, the *Iliad* has # νῆας ἀνὰ γλαφυράς⁵ | but only twice. Similarly, it is easy to imagine that # Τροίη ἐν εὐρείῃ⁵ | (Ω 256 = 494) has something to do with # Κρήτη ἐν εὐρείῃ⁵ | (Ν 453) and that # χώρῳ ἐν οἰοπόλῳ⁵ | (Ν 473, Ρ 54) has given rise to # χώρῳ ἐνὶ προ-αλεῖ⁵ | (Φ 262). There are also a few cases like # οἴκῳ ἐν ἡμετέρῳ⁵ | (Γ 233), which has beside it a variant that can be used in a line of a different, but common, structure: # ἡμετέρῳ ἐνὶ οἴκῳ⁵ | (Α 30).

In any case, if it is reasonable to recognize in these segments a metrical/syntactic/positional type of which an epic poet may have been consciously aware, it is to this type that # ἐξ ὀρέων ἐπὶ καρ⁵ | would have belonged. And since the expressions here are otherwise self-contained, it is perhaps best not to see the ἐπὶ-καρ that finishes the segment as belonging only to the ῥέουσαι in the previous line. In fact, one might even consider the idea that ἐπίκαρ ‘headlong’ goes most closely with ἐξ.

Appendix II – πρόχυν

The adverb πρόχυν occurs three times in Homer, and twice seems to mean something like ‘utterly’:

Φ 459–60 ... ἀπόλωνται / πρόχυν κακῶς ...

ξ 68–9 ... ὀλέσθαι / πρόχυν ...

In the meanings ‘entirely’ and ‘really, actually’ the word is eventually resuscitated by Apollonius Rhodius (1.1118, 2.249). But the third Homeric occurrence (I 570) is in the phrase # πρόχυν καθεζομένη ..., which very probably means ‘sinking to her knee(s)’. And this, reasonably enough, is generally considered¹ its original meaning – ‘to the knee(s)’. If so, it may well be no coincidence that the ξ passage mentioned above reads in full:

... ὥς ὄφελλ’ Ἑλένης ἀπὸ φῦλον ὀλέσθαι
πρόχυν, ἐπεὶ πολλῶν ἀνδρῶν ὑπὸ γούνατ’ ἔλυσε·

That is, one might consider the possibility of a word-play of sorts between πρόχυν and γούνατα.

However this may be, the meaning ‘to the knee(s)’ for πρόχυν has suggested the view that the -χυν is somehow to be identified with the γνυ- of γνύ-ξ ‘(on)to one’s knee(s)’ and several compounds quoted by Hesychius that all combine γνυ- ‘to the knee(s)’ with a verbal (or deverbative) form of πίπτειν ‘fall’ – γνυπτεῖν ἄσθενεῖν. μαλακίζεσθαι; γνυπετόν ἄργόν ... etc. This γνυ-, of course, is the zero grade root and suffix allomorph of γόνυ ‘knee’ (and cf. further ἰγνύα ‘hollow at the back of the knee’, ultimately a governing compound – § 26.9.1 – *en-ḡnu-ā*²).

The obvious problem, however, is the aspirate χ in place of expected γ. Less immediate, but still troublesome, is the question of the meaning of a theoretical *pro-ḡnu*. To be sure, πρόχυν καθεζομένη would make good sense if πρόχυν could be taken somehow as the outcome of an adverbialized possessive compound *pro-ḡnu* ‘with pro(jecting) knees’ (cf. Skt. *pra-jñu-* P. 5.4.129 ‘bow-legged’). The phrase in

¹ Schwyzler GG 1, 328 with further references; Risch², 364; Frisk GEW 2, 605; Chantraine DELG, 233.

² On this word and some related ones see Forssman, KZ 79, 28 ff.

Homer could then have meant ‘with knees out in front (of her)’, and this would apply perfectly well to a certain posture of kneeling. What is less well explained is the semantic development of ‘with knees out front’ to ‘utterly’. Furthermore, there would still be no direct explanation of the directive γνυ- of γνύ-ξ and the peculiar γνυ-π(ε)τ-forms. In addition, the phonological problem remains. The reconstruction *pro-gnu* is therefore probably incorrect.

All these difficulties disappear simultaneously, however, as soon as one compares πρόχνη καθεζομένη with ... πρὸς γούνα καθέζετο ... (σ 395). Even though the σ passage describes one person (Odysseus) dropping to(ward) the knees of a second person (the suitor Amphinomos) in order to duck a footstool (hurled by Eurymachus), it shows that when καθέζεσθαι denotes the motion of sitting down and the end of this motion is γόνυ or γούνα ‘the knee(s)’, it is admissible to use πρὸς to express this.³ And it would be difficult to maintain that there is any systematic syntactic distinction to be recognized in Greek between internal and external ends of motion. One may note the identity in construction of, e.g.:

N 281 ... ἐπ’ ἀμφοτέρους πόδας ἵζει

‘... it (the θυμός of a cowardly man) sinks into his two feet’

and

Ξ 437 ἐξόμενος δ’ ἐπὶ γούνα κελαινεφές αἶμ’ ἀπέμεσσεν

‘and he vomited dark blood as he sank to his (own) knees’.

Returning to πρὸς γούνα as an end of motion, there is another example, with a different verb but otherwise parallel, in Hesiod (*Theog.* 459–60):

... ὥς τις ἕκαστος / ... μητρὸς πρὸς γούναθ’ ἵκοιτο

‘as each one would arrive at his mother’s knees (in childbirth)’.

If, then, as a first step in attempting to analyze πρόχνη ‘to the knee(s)’, we ask how this notion is conveyed at all in epic language, the answer seems to be that it is either ἐπὶ γούνα (Ξ 437) or πρὸς γούνα (σ 395, *Theog.* 460). This will have to be an ingredient in a solution.

³ πρὸς γούνα καθέζεσθαι ‘drop to a position up against the knees’ may on the one hand be contrasted with ἐξόμενος δ’ ἐπὶ γούνα (Ξ 437) ‘dropping down onto the knees’ (cf. just below), and may on the other hand be compared to the numerous cases of πρὸς ‘up against’ (Chantraine *Gramm* 2, 133; LSJ, 1497 *sub* C.2.a.; Ebeling *Lex* II, 233, col.2). With no motion (and therefore dat.-loc.) cf. also E 408 ποτὶ γούνασι ‘at his knees’.

A second ingredient, already mentioned, is that descriptively speaking, Greek seems to have a γvu- which, as such, has only directive function. The adverb γvύ-ξ in Homer appears only in the phrase γvύξ ἐριπεῖν (6x in *Il.*) ‘fall (on)to one’s knee’. It is practically certain that the final -ξ of this form comes from the adverbs (all made on body part terms) λάξ ‘with the foot’, ὀδάξ ‘with the teeth’, and πύξ ‘with the fist’ (also ‘with respect to the fist’ – e.g. πύξ ἀγαθός Γ 237). But since all three potential models have an instrumental function, the directive sense of γvύξ is to be attributed not to the added -ξ, but to the γvu- itself. And this is confirmed by the γvu-π(ε)τ- compounds in Hesychius mentioned above.

We are left, therefore, with an adverbial (directive) γvu which appears both as the free form γvύ(ξ) and in verbal compounds. What we do not yet have is an exact explanation of this γvu ‘to the knee’, since it cannot, as it stands, directly continue an appropriate case form of γόνυ ‘knee’. One might suppose that the γvu in question was extracted from somewhere, and a compound of some sort would come to mind first,⁴ but the Greek material will take us no further.

There is, however, potential comparative evidence to be taken advantage of in Avestan, where there is found the adjectival compound *ā-(x)šnu-* (m. acc. pl. *ā-(x)šnūš-(ča)* Y.57.6) ‘(extending) to the knee(s)’. Synchronically, this would appear to be an example of a rare compositional type – a prepositional governing compound with no compositional suffix (cf. § 26.9). There is more than one possible way of dealing with this formation. For the moment, it is enough to note that both Avestan and Greek have apparent reflexes of a *-ḡnu-* which has a directive function and is found compounded with an adverbial element in both languages, though in neither is its interpretation entirely obvious.

Returning to πρόχvu itself, we have seen that ‘to the knees’ with a verb of motion can be expressed as πρὸς γούνα. What is more, it is even found once in Homer (πρὸς γούνα καθέζετο) with the same verb as appears with πρόχvu. To this we may add that the use of this particular preposition with ‘knee’ under these circumstances may be consid-

⁴ Perhaps from the γvu-π(ε)τ- compounds themselves? But these certainly at least give the impression of presupposing an already-directive adverbial γvu-, compounded relatively recently with π(ε)τ-forms. And this impression is strengthened by there not being even a *γvu-πετής, which could at least potentially represent something old (cf. E. γονυ-πετής).

ered an idiom of sorts,⁵ given that the construction found when it is a matter of falling (etc.) onto another part of the body is with ἐπί (plus accusative or even dative).⁶ For an internal end of motion, an example would be:

E 586 ἔκπεσε ... ἐπὶ βρεχμόν τε καὶ ὤμους

‘he fell out (of the chariot) onto his forehead and shoulders’ (cf. Z 43, Π 410—both with ἐπὶ στόμα ‘onto his face’).

And this commoner construction is also found once with γούνα (Ξ 437 mentioned above). It could therefore be said that πρὸς with γόνυ is not only admissible, but even characteristic. Finally, it would appear that a directive *-ǵnu-* may be attributed to Greek (in γνύ-ξ and γνυ-π(ε)τ-), and may itself prove to be inherited (if it could/should be aligned with Avestan *ā-(x)šnu-*).

Combining these observations, it would be easy to admit the possibility of a *πρὸς-γνυ ‘to the knee(s)’ (necessarily a Greek creation as such—see below). This formation, however, containing the otherwise unknown sequence⁷ *-sgn-* (or *-zgn-*) would be liable to some rearrangement almost immediately, and the likelihood of such a development would become even greater as soon as the “compound” had begun to take on its extended (but already Homeric) sense of ‘utterly’. For as soon as this had begun to occur, the form would cease to suggest πρὸς and -γνυ- quite so immediately. If on morphological (γνύ-ξ, γνυ-π(ε)τ-, *ā-(x)šnu-*) and syntactic (πρὸς γούνα) grounds a *prós-gnu* seems satisfactory, but if the actual outcome takes the form πρόχυν it would

⁵ It may also be noted that γούνα/γούνατα is idiomatically used simply as a terminal accusative with ἰκάνειν/ἰκέσθαι. This is said very often of the action of a suppliant:

τὰ σὰ γούναθ’ ἰκάνομαι	(Σ 457, γ 92 = δ 322)
σά τε γούναθ’ ἰκάνω	(ε 449, η 147)
σευ φίλα γούναθ’ ἰκάνω	(ν 231)
τὰ σὰ γούνα ἰκόμεθ’	(ι 266 f.)

But there is also the expression of the type exemplified by:

κάματός τε καὶ ἰδρὸς γούναθ’ ἵκοιτο	(N 711)
λιμὸς ἀτερπῆς γούναθ’ ἵκηται	(T 354)

And the phrase in N 711 most likely has something to do with Hesiod’s πρὸς γούναθ’ ἵκοιτο (*Theog.* 460) mentioned above.

⁶ We should distinguish the construction seen, for instance, in βεβλήκει πρὸς στήθος (Δ 108).

⁷ Both *-sg-* (*-zg-*) and *-gn-* were admissible sequences (μίσγω, στυνγνός etc.), but this naturally tells us nothing about *-sgn-* (*-zgn-*). Nor does the admissibility of *skn-* (σκι-πός) and (eventual) *-skhn-* (ἰσχνός—cf. note 9 below). Cf. Lejeune *Phonétique*², 78.

appear that the phonological difficulties presented by *prosgnu/prozgnu* led to a metathesis of *prosgnu* to *proksnu*. The regular outcome of this preform would be πρόχνη (cf. *luksnos* > λύχνος etc.).

Chronologically and dialectally, this hypothesis only requires the compound to have been formed 1) *after* the $T_i > s(s)$ development (μεθιο- > μέ(σ)σος etc.) that produced πρόσ from *proti/_* # *V* 2) *before* the change of *-ksN-* to *-khN-* 3) in a dialect that had *proti* rather than *poti* and generalized the (originally prevocalic) allomorph *pros* < *proti* (i.e. in a dialect whose only form of the preposition is πρόσ). The possibilities are Attic-Ionic and Asia Minor Aeolic (as represented by Lesbian).⁸ Either Ionic or Asia Minor Aeolic is a reasonable source for a Homeric adverb, and there is consequently no difficulty from that point of view. As to the relative chronology of $T_i > s(s)$ and *-ksN-* > *-khN-*, this is hard to fix both for Ionic and for Asia Minor Aeolic. But to judge by the Mycenaean situation, the chronology demanded by the hypothesis just presented is the correct one. In Mycenaean the $T_i > s(s)$ change has already occurred (*to-so* < *toti-o-*, *me-sa-to* < *methi-a-to-*) but the development of *-khN-* from *-ksN-* has not (*a₃-ka-sa-ma* for *aiksmā* vs. Hom. etc. αἰχμή). There seems to be no obvious objection to assuming that this was also the chronology in Ionic and/or the variety of Aeolic for which the question is relevant.

Moreover, it may be that the metathesis of *-sgn-* to *-ksn-* has at least a partial parallel in αὐχμός ‘dryness, drought’ (Ionic and Attic authors; presupposed also by *Od.* + αὐχμέω and αὐχμῆεις *h. Hom.* 19.6). The form is somewhat difficult to analyze, but an identification of its root with that of αὔος (Hom. +) / αὔος (Attic) ‘dry’ is practically unavoidable, and it is highly probable that it owes its -μός- to semantically related terms such as κρύμός (< *krus-mo-*) ‘cold(ness), frost’ (Hdt. +), φλογμός ‘heat, flame’ (A. +), and λιμός ‘hunger’ (Hom. +). αὐχμός most directly reflects (*h*)*auksmo-*, but the comparative evidence points to *saus-o-* (Lith. *saũsas*, OE etc. *sēar*; cf. also αὔος / αὔος itself) beside *sus-k-o-* (Av. *huška-*, RV *śuška-*, assimilated from **suška-*; cf. Lith. *sũskis* ‘scabies’). This favors a *saus-k-mo-* / *haus-k-mo-* with metathesis to *hauksmo-* whence αὐχμός.⁹ If so, the *-skm-* to *-ksm-* develop-

⁸ πρόσ is found both in Lesb. inscriptions (e.g. Schwyzler *DGEER*, no.620) and in literary Lesbian (e.g. Alc. 130.27, *PLF*) with no competitor (if one hesitates about the πρέξ reported by a single very late grammarian—cf. Thumb-Scherer *GD*, 108).

⁹ So too Risch², 46 note 42. It is less satisfactory to start with a *saus-k-smo-* (> *sayk-smo-*) because ἰσχνός ‘withered’ (from *si-sk-sno-* cf. *si-sk-u-* > Av. *hišku-* ‘dry’ etc.) seems to show that *s* was preserved before *-KsN-*.

ment in ἀνχμός could be compared to the metathesis of *-sgn-* or *-zgn-* to *-ksn-* suggested here for πρόχυν.

Finally, the use of the isolated and seemingly archaic γυν in a complex adverb that was formed relatively recently is not, by itself, a great difficulty either. One need only suppose that the very same directive γυν '(on)to (one's own) knee(s)' that was expanded at some point to γνύ-ξ (cf. πύξ etc.) was also remade to πρόσ-γυν under the influence of the idiom πρὸς γούνα. The one problem that does remain, however, is the source of the directive γυν in the first place.

It has already been noted that it is unlikely to reflect any case form of the simplex *ḡonu-* 'knee' itself, and that it is most plausibly regarded as having been extracted—probably from a compound. This brings us back to Av. *ā-(x)šnu-* '(reaching) to the knee', and its suffixless structure—rare for a governing compound. Beyond this, only hypotheses are possible. But it may be worth pointing out that the difficult Greek γυν and the unusual *ā-(x)šnu-* can be accounted for simultaneously with the hypothesis that PIE had one or more adverbial "univerbations" (cf. §§ 26.8.1 ff.)—type *pér-uti* 'in the previous year', *mé-ḡhsri* 'to hand'—that had originally contained a preverb/preposition plus a locative (*-ḡney*) or even accusative (*-ḡonu*) of 'knee', the substantive having eventually undergone reduction (to *-ḡnu*) of the type seen in *-uti* and *-ḡhsri* above. Choosing as a hypothetical example the back-projected form of what actually appears in Avestan, one might conjecture that a PIE *ō ḡney/ō ḡonu* 'to the knee' became *ōḡney/ōḡonu* early enough to have undergone reduction to *ōḡnu*. The resulting I-Ir *āžnu* would then have been provided at some stage with a full adjectival inflection—largely, one might argue, because its second element *-žnu* (synchronically easily referable to *žānu* 'knee') coincided exactly with the nom.-acc. neuter (often used adverbially) of genuine compounds (possessive) that had 'knee' as second member:¹⁰ cf. Skt. *mitá-jñu-* (RV) 'sturdy-kneed', *asita-jñu-* (AV) 'dark-kneed', *ūrdhva-jñu-* 'with knees (held) high', and in particular Av. *fra-šnu-* 'with projecting knees', its Skt. equivalent *pra-jñu-* 'bowlegged' (P), *saṃ-jñu-* 'knock-kneed' (id.), and adverbialized *abhi-jñu-* 'with bent knee'. In these possessive compounds the reduction in the second member is of an entirely different order (§ 26.10.3). Also playing a role in this hypothetical re-interpretation of *āžnu* (univerbation) as an adjectival (governing) compound (nom.-acc. neut.) used adverbially would be the circumstance that many compounds made up

¹⁰ Cf. W-D 2.1, 94.

of a preposition/preverb plus a substantive are systematically ambiguous between possessive and governing interpretations.¹¹ This is clearest when the second member is itself an *-o-* (or *-i̯o-*) stem – e.g. RV *ā-bhaga-*, either ‘having a share (coming, owed etc.) to one’ (bahuvrihi) or ‘(acceding etc.) to a share’ (governing). It would therefore not be surprising if unambiguous bahuvrihi morphology were to be used occasionally in a governing compound.¹² If in addition, as in the case of theoretical *ā́znu*, there is a purely formal point of contact (*-znu* both in bahuvrihis and in this apparent adverbialized governing compound), a development of this kind would be still less remarkable.

In fact, Avestan *ā-(x)šnu-* ‘(extending) to the knee’, if taken by itself, would not necessarily require an inherited univerbation *X-ḡnu* at all. It could be merely an example of a governing compound made with the structure of a possessive (for reasons just touched upon). What suggests that the possibility of some PIE case(s) of univerbated *X-ḡnu* be seriously considered is the appearance in Greek of a directive γvu. For since this must have been extracted from somewhere, and almost certainly ought to be put together with *ā-(x)šnu-* in one way or another, the interpretation of the Avestan form as an irregular governing compound would practically require that the Greek directive be considered de-compositional from the same (or same kind of) unusual compound. And this, in turn, would come close to presupposing that some suffixless governing compounds (rare in the individual languages) were already found in PIE itself.¹³

There would consequently seem to be some point in starting with the univerbation *X-ḡ(o)nu*/*X-ḡn(e)u* with a further development for eventual *ā-(x)šnu-* in Avestan as above. For Greek, one could then conjecture that some such *X-ḡnu* (with an apparent directive -γvu) served as the direct source of γvú-(ξ) and πρός-γvu.

At the same time, it is theoretically possible to take the entirely different approach of analyzing πρός-γvu as an adverbialized bahuvrihi (probably made on some more original *X-ḡnu-* bahuvrihi) meaning ‘with the knee up against (it)’ or the like. A compound of this type and structure could certainly be paralleled (§ 26.10.1 – and cf. RV *abhi-jñú*

¹¹ Cf. Risch², 187.

¹² Similarly, one might be in some doubt as to whether RV *abhi-dyu-* ‘(reaching, moving) to the sky’ is best taken as a governing compound with bahuvrihi morphology or a “univerbation” (§§ 26.8.1 ff.) that has secondarily become an adjectival (governing) compound.

¹³ Cf. § 26.9.1 with note 115.

‘with knee toward (it)’). One could even suppose then that directive γυν (γνύ-ξ / γυν-π(ε)τ-) was extracted from πρόσ-γυν (καθέζεσθαι etc.) itself after the bahuvrihi had been re-interpreted—precisely because of πρὸς γόνφα (καθέζεσθαι etc.)—as an adverbialized governing compound. One may easily imagine a number of verbs (falling, sinking, sitting, etc.) with which πρόσ-γυν (‘with opposed knee’) and πρὸς γόνφα (‘to the knees’) could both have been frequent. And if πρόσ-γυν eventually came to be nothing but an alternative to πρὸς γόνφα in this way, the appearance of both with the same verb in Homer is not surprising.

There seems to be no absolutely decisive argument in favor of either interpretation of πρόχυν. Whether it is a univerbation or a bahuvrihi, an earlier *X-ḡnu* on which it could have been modelled seems required (since a *proti-ḡnu* cannot have yielded it directly). This, however, is not a serious drawback for either view. One might compare ἐγ-γύ-ς → μεσ(σ)η-γύ-(ς)—§ 26.8.2—for a case in which a probable univerbation has acquired a new “first member”, and Hom. προσ-κηδής for an example of πρὸς in particular introduced (preconsontally) into a bahuvrihi (cf. Hom. ἄ- / λαθι- / πολυ-κηδής). And while it seems that Av. *ā-(x)ḡnu-* might be dealt with most easily under the assumption of one or more inherited adverbial univerbations in *-ḡnu*, it does not absolutely require it.

Additions and Corrections

(at the bracketed asterisks in the text)

§ 1

- * Theoretically, one could argue that the apparent $\hat{k}ruh_2$ - of Av. *srū*- does not decisively exclude a *set* $\hat{k}erh_2$ - at the very beginning. For it is possible to envision one or more sets of developments, varying in complexity, that would allow one to start with a $\hat{k}erh_2$ - and still finally arrive at Av. *srū*-. If, for example, there was a metathesis of sequences of the type *CHi/uC* to *Ci/uHC* (cf. W. Winter, *Evidence for Laryngeals*², 192 f.), a $\hat{k}erh_2u$ -C could have become $\hat{k}eruh_2$ -C, and there could have been a new zero grade $\hat{k}ruh_2$ - produced beside this (whence *srū*-). The case would be like that of $\hat{g}erh_2u\mu on$ - (YAv. *zauruuan*- 'old age') beside $\hat{g}ruh_2$ - (YAv. *zru-uan*-/*zrūn*- 'time'). An analogical $\hat{k}ruh_2$ - ultimately based on a $\hat{k}erh_2u$ - could be obtained with other similar hypotheses as well, but the point is not worth belaboring. For there is not the slightest positive indication that would favor a $\hat{k}erh_2u$ - in the first place.

§ 4.3

- * A.S.C. Ross (*KZ* 77 (1961), 271 ff.) argues for a Gmc. *herta*- beside *heruta*-. If so, we may have in this form indirect evidence of the $\hat{k}er$ - h_2 that appears in Hittite (§§ 10 ff.) and Gk. (§§ 12 ff.) in a Gmc. derivative that reflects (quasi) $\hat{k}erh_2$ -do-.

§ 5

- * Because of Gk. $\kappa\omicron\rho\upsilon\theta$ - ($\hat{k}oru$ -*dh*-) 'helmet', it would seem that Gmc. *heruta*- 'horned' and Gk. $\kappa\omicron\rho\upsilon\delta\omicron$ - 'crested' are best segmented *herut*-*a*- ($\hat{k}erud$ -*o*-) and $\kappa\omicron\rho\upsilon\delta\omicron$ - ($\hat{k}orud$ -*o*-), with an endocentric -*d*- and possessive -*o*- rather than $\hat{k}e/oru$ -do- with a possessive -*do*-. Cf. also *pekud*- in Latin *pecus*, -*udis*. An analysis $\hat{k}e/oru$ -do-, however, would not interfere with any of the proposals to be made below.

- § 7.1 * A more precise reconstruction of the PIE root noun for 'nose' would be *Hnās-*. Cf. RV *urūṇasá-* 'wide-nosed' and *ṣṣūnas-* 'straight-nosed' (PN).
- ** I. Eichner-Kühn (*MSS* 34 (1976), 23 ff.) suggests that KS. *mastyraṇ-* 'brain' is the exact correspondent of Av. *mastarəyan-*, indicating that a more accurate reconstruction would be I-Ir *mastyraṇ-* < *me/ostyrgh^(u)e/on-*.
- § 8.4 * Cf. addendum to § 1 as well.
- ** A similar development seems to have led to Vedic *apvā-* (= *apuvā-*) 'panic'. The OP correspondent is *afuvā-*, reflecting *apuā-*, and the trisyllabic Vedic stem (cf. also the denominative *apuvā-yāte*) may thus be explained as resulting from levelling within a paradigm that once ablauted between *apuā-* (generalized in OP) and *apuu-*. See Kuiper, *Notes*, 16 and Hoffmann, *Aufsätze* 1.52 ff. (= *Corolla Linguistica* (Festschrift Sommer), 80 ff.).
- *** But cf. addendum to § 37.7.
- § 9.7.2.2 * For reasons that are not clear to me, the archaic structure *C₁eC₂H-s* in neuter *s*-stem nom-accusatives is securely displayed only where *C₂* is *r* or *u*. In particular, formations reflecting *CeNH-s* seem to be lacking. Cf. PIE *ǵenh₁-os* (Ved. *jānas*, Gk. *γένοϝ* etc.), for example.
- § 12.2 * Further afield, cf. *Beowulf* 1900–1 ... *bunden goldes sword* ... I would like to thank J. Schindler for pointing out this parallel to me.
- § 24.1.2 * It is worth noting that this analysis of *κρήνωϝ* makes it an example of the type of bahuvrihi exemplified by Vedic *vájra-bāhu-* 'having a thunderbolt in the arm' or *śu-hasta-* 'having an arrow in hand' (W-D 2.1, 279), to which corresponds a series of Avestan cases like *aēsmō.zasta-* 'with firewood in hand'. In Greek itself, the clearest example of the type is *ἰοχέαιρα* 'having an arrow in hand' (fem.) < *isyo-khehar-ja* (see Peters *Untersuchungen*, 223 ff.), a close parallel to Ved. *śu-hasta-* above. To be sure,

the type is completely unproductive in Greek, and this makes it risky to propose a new example of it. But this kind of bahuvrihi, which practically always has a body-part term as second member, has 'hand' there particularly frequently—and $\kappa\rho\tilde{\alpha}\text{-}\gamma\upsilon\text{-o-}$ would conform well to this. Furthermore, classing $\kappa\rho\tilde{\alpha}\text{-}\gamma\upsilon\text{-o-}$ with the type in question would only require that it be an old and probably inherited compound, and this is necessary anyway given that $\gamma\upsilon\text{-}$ 'hand' is completely obsolete in Greek.

- § 28.5.2 * It must be admitted, however, that *lammar* (*lammar*) could represent a temporal accusative rather than an accusative with locative function. It is therefore not so clear that it provides a parallel to an accusative *kar*.
- § 29.1 * By $\acute{k}er\text{-}e\text{-}h_2$ is meant a $h_2\text{-}$ derivative of an *o*-stem made on $\acute{k}er\text{-}$.
- § 33.1 * J. Schindler informs me that there seems to be an early Mod. Pers. *sār* in addition to *sar*. If so, the etymological correctness of the long vowel in *sāra* would only tend to be somewhat substantiated.
- § 33.5 * It is freely admitted that the semantic reconstruction adopted here is hypothetical and certainly discussable. Nor is it impossible to imagine that it might be improved upon. At the moment, the most serious drawback to this hypothesis that I can see is that no IE language actually presents us with a single lexical item that has precisely the meaning ('hard stuff of the head') attributed here to PIE $\acute{k}er\text{-}h_2$, and it is thus not possible to support this reconstruction with a parallel. At the same time, of course, the lack of an item with just this meaning in the daughter languages means that the suggestion in question is not flatly contradicted by anything either (e.g. a totally different formation with this meaning).

But in any case, it should be clear from the discussion as a whole that the semantic reconstruction

was not chosen because it is *per se* demonstrable or even necessarily appealing, but rather because morphological factors dictate it (or something like it). For it does appear advisable to reconstruct two different paradigms for the stem(s) $\hat{k}(e)r-(e)h_2-$ (§§ 30–32.1), one of them ought to have been a proterokinetic $\hat{k}ér-h_2$ that probably became a “normal” eh_2 -stem (§ 32.2), the only forms that demand this proterokinetic pre-form mean ‘horn’ (§ 32.2—and one descriptively names the material—§§ 12.2 ff., 33.5), and there is evidence of a word for ‘head’ that on morphological grounds is most easily taken as a derivative of the very proterokinetic $\hat{k}ér-h_2$ in question (§§ 33.6 ff., addendum to § 33.6). The result is that a meaning had to be reconstructed for $\hat{k}ér-h_2$ that can account both for the meanings of its apparent reflexes and for the meaning ‘head’ in a derivative of a known type. The conjecture ‘hard stuff of the head’ is an attempt at something that will satisfy these requirements.

§ 33.6

*

It may be noted that the stem allomorph that would seem to have undergone the process of $v\check{r}ddhi$ and suffixation here ($\hat{k}érh_2 \rightarrow \hat{k}érh_2-o-$) is that of the strong cases of the singular. To be sure, it is usually the weak stem that serves as the basis for a derivative of this kind:

strong *pod-* ‘foot’

weak *ped-* \rightarrow *pēd-ó-* ‘of (at) the foot/bottom, sole’ (Gk. $\pi\eta\delta\acute{o}\nu$ ‘oar-blade’, Lith. *pėdà* ‘footprint’)

strong *dīeṃ-* ‘sky’

weak *dīṃ-* \rightarrow *deīṃ-ó-* ‘of the sky, a god’ (Ved. *devá-*, L. *deus/diuos* etc.)

But cases of $v\check{r}ddhi$ derivatives made to the strong stem of the basis are also known. Vedic *cākṣmá-*, for example, would appear to be an *a-* (*o-*) derivative of the neuter *men-* stem seen in Av. *čāšman-* ‘eye’ (W-D 2.2.125). It would also seem to be a relatively old

one, both because the derivational basis is no longer there in Vedic itself, and because the derivative shows the same phonological development ($-mno-$ > $-mo-$) that is to be observed in compounds with compositional $-o-$ and a *men*-stem as second member (e.g. *kárman-*: *vīrá-karma-* cf. W-D 2.1.115, 118). And this phonological development may have first occurred in PIE itself (cf. Gk. $\theta\nu\omicron\mu\alpha$: $\nu\omicron\nu\nu\mu\omicron\varsigma$ < $-m\eta$: $-mn-o-$). A parallel to *čašman-*: *cākṣmá-* may be Ved. *bráhman-*: *brāhmá-* if the derivational basis is taken (with W-D 2.2.125) to be *bráhman-* and not *brahmán-*. It would appear, in any case, that pairs of this kind would require at least that there would have been some old models showing the derivational pattern $CéC(C)-m\eta \rightarrow CēC(C)-mn-ó-$ (> $-m-o-$). But this amounts to the formation of a derivative with *vṛddhi* and $-o-$ from the strong stem of a proterokinetic basis. As such, it is precisely parallel to the $\hat{k}ér-h_2 \rightarrow \hat{k}ēr-h_2-ó-$ being proposed.

We may also note that *pod-/ped-*: *pēd-ó-* and *d̥iēu-/diu-*: *deju-ó-* (as above), if they are assumed to establish the normal pattern, would lead us to demand $\hat{k}ér-h_2/\hat{k}ēr-eh_2-$: $\hat{k}ēr-ēh_2-ó-$ in the present case. But although $-iH-o-$, $-uH-o-$, $-yH-o-$, $-ṛH-o-$ etc. are well-represented PIE structures, $-eH-o-$ seems almost never to be found in IE nominal or verbal morphology and cannot be securely reconstructed for the protolanguage either. It might therefore be suspected that even if $*\hat{k}ērēh_2-o-$ had been the theoretically "correct" derivative, it would have been blocked by a more general restriction.

§ 35.2

- * I do not believe that nom-accusatives like L. *iter* 'road, journey' require the reconstruction of a nom-acc neut. sg. type in $-(C)eC$ for PIE. Cf. J. Schindler, *BSL* 70 (1975), 8 f. Paradigms like (proterokinetic) $-tr/-ten-$ (cf. $-ur/-uen-$) could presumably have generalized, from time to time, the *e*-grade of the oblique (*n*-)stem to the nom-acc (*r*-)stem.

§ 37.1 * The derivation of neut. collectives (> neut. nom-acc. pls.) from non-neuter singulars is in and of itself well-established, of course, by cases like Gk. μηρός 'thigh': μηρα, Latin *locus* 'place': *loca* etc., where the derivational basis is an *o*-stem. Even for consonant-stems, one at least has ἀστήρ 'star': ἄστρα. What does not seem to be found, however, is the situation described here—i.e. a consonant stem, non-neuter singular that makes a neuter collective of the type with lengthened-grade suffix.

§ 37.6.2 no. 2 * The justice of seeing a "heteroclisys" (amphi- or hysterokinetic vs. proterokinetic) in a nom-acc like *bráhmāṇi* vs. gen. *bráhmanām* depends, of course, on whether neuter gen. plurals in *-man-ām* (cf. also RV *dhármanām*, *mánmanām*) are old and owe their apparent suffixal full-grade (as if < *-men-*) to the same factors that account for it in, e.g., the g.-abl. sg. (*-man-as*) or the dat. sg. (*-man-e*). Inasmuch as neuter *men*-stems may be assumed to have been proterokinetic, one starts in the singular with 'strong' *-mṇ-*/'weak' *-mén-*, and one could then suppose, theoretically, that the gen. pl. was always simply a 'weak' case of the same status and structure as the g.-abl. or dat. singular.

The problem is that agreement in suffixal ablaut between singular 'weak' cases and their plural counterparts is the exception rather than the rule in (proterokinetic) neuter *men*-stems. More typically, the singulars appear to reflect *-men-* while the plurals show *-mṇ-*: e.g. dat. sg. *-man-(e)* vs. pl. *-ma-(bhyas)*; abl. sg. *-man-(as)* vs. pl. *-ma-(bhyas)*. The apparent full-grade suffix in gen. sg. *-man-as* (cf. Gath. *-māṇg* < *-man-s*) is thus anything but an argument in favor of taking the *-man-* of gen. pl. *-man-ām* as original.

In fact, at least in the case of masc. and fem. substantives, it may even be meaningless to speak of proterokinetic inflection at all in the plural. Masculine and feminine *i*-stems, for instance, that inflect

proterokinetically in the singular had nom. *-i-s*, gen. *-eġ-s*, loc. *-ēġ*, etc. But in the plural, they may well have had nom. *-eġ-es* (L. *-ēs*, Ved. *-ayas* etc.), gen. *-(i)ġ-ōm* (L. *-ium*, OHG/OS *-io* etc.), loc. *-i-su* (Ved. *-iṣu*, Gk. *-ισι*) etc. In that case, one might just as well say, in a sense, that masc. and fem. proterokinetic singulars have hystero-kinetic plurals. Only the acc. pl. *-i-ns* would interfere with this descriptive statement.

But even if we cannot insist on the specific supposition that a pair like nom-acc *brāhmāṇi*/gen. *brāhmaṇām* ultimately represents a 'heteroclitic' association of an amphikinetic (or hystero-kinetic) nom-acc with a proterokinetic oblique, the main point of § 37.6.2 can still be made. While nom-acc plurals both of the type (e.g.) *-e-h₂* and of the type (e.g.) *-mō(n)* are ultimately derivatives of their respective singulars (*-o-m* and *-mṇ*), the plural oblique forms eventually assigned to them are almost certainly not to be considered members of the original paradigms of those derivatives at all. Instead, they were apparently formed by pluralizing the oblique forms of the singular (i.e. the obliques of the derivational basis of the nom-acc pl. in question). This would have been done analogically on the model of the patterns displayed by masc. and fem. oblique singulars vs. their own plurals in the various inflectional types. Neuter nom-acc plurals on the one hand and their associated plural obliques on the other might therefore be considered independent in their origins even if they are not exactly in a 'heteroclitic' relationship to one another. And if this can be said of all types of neut. nom-acc plurals and their obliques, we still have an indication that favors associating nom-acc plurals in *-h₂* as closely as possible with those in *-ē/ōC*. This, in turn, could favor a common origin for the two types.

the stem structure displayed by $g^{\#}n\text{-}eh_2\text{-}iH$ (zero root plus e suffix) with that of the oblique singular case forms allows this dual to be viewed as a 'weak' case and compared in that respect with neuter nom-acc duals as against masc. and fem. nom-acc duals. But it must also be noted that proterokinetic masc. and fem. singulars showed a full-grade suffix in their nom. plurals (e.g. $-ei\text{-}es$, $-eu\text{-}es$), and it is even arguable that at least some mascs. and fems. that were proterokinetic in the singular were basically hysterokinetic in the plural (outside the accusative) – cf. addendum to § 37.6.2 no. 2.

The question, therefore, is whether such mascs. and fems. in their nom-acc dual had the suffix-shape of the nom. sg. (zero grade) or that of the nom. pl. (e grade). If these nom-acc duals were parallel to the corresponding nom. plurals, then $g^{\#}n\text{-}eh_2\text{-}iH$ would have the stem-shape that it has simply by virtue of belonging to the paradigm of a fem. substantive whose singular had ideal proterokinetic inflection (and cf. nom. pl. $g^{\#}n\text{-}eh_2\text{-}es > OIr\ mná$). Its allomorphy, in that case, would not be comparable to neuter $-men\text{-}iH$ etc. If, on the other hand, nom-acc duals of masc. and fem. proterokinetic singulars were structured like those singulars (and were themselves therefore proterokinetic), then $g^{\#}n\text{-}eh_2\text{-}iH$ is aberrant and does have the root and suffix allomorphy descriptively appropriate to a neuter dual.

Unfortunately, the evidence does not seem to allow an absolutely firm conclusion as to whether masc. and fem. proterokinetic singulars had a nom-acc dual structured like their own nominative or like the corresponding nom. plural. The only group of masc. and fem. proterokinetic singulars for which there is plentiful evidence is made up of the i - and u -stems of this type. If the masc. and fem. nom-acc dual ending in PIE was simply $-e$ (Gk. $\pi\alpha\tau\acute{\epsilon}\rho\epsilon$ etc. cf. OIr *sieir* '(two) sisters' < $-r\text{-}e$, Lith *žmûne* '(two) men'), then the most original forms

would either have been $*-eu-e$ and $*-ej-e$ or $*-u-e$ and $*-i-e$. But there is almost no convincing evidence pointing to either of these structures. Instead, I-Ir, Balto-Slavic, and Old Irish mainly point to $-\bar{u}$ and $-\bar{i}$ (e.g. Ved. *sūnú*: Lith *sūnu*: OCS *syny*; Ved. *srutí* 'two streams': Lith *ašī* 'two axles': OCS *tati* 'two thieves': OIr *súil* 'two eyes' < *sūlī*). It seems that duals in $*-eu-e/*-ej-e$ or $*-u-e/*-i-e$ were replaced very early by analogical forms in $-\bar{u}$ and $-\bar{i}$, presumably on the model of the *o*-stems ($-o-s$: $-\bar{o}$ = $-u-s$: $-\bar{u}$ and $-i-s$: $-\bar{i}$).

To be sure, it could be argued that Ved. *bāhāvā* (3x RV vs. *bāhū* 20x) : Av. *bāzauna* : Gk. *πήχες* do point to one of the expectable original structures ($-eu-e$). But the I-Ir forms could be isolated innovations (nom. pl. *pād-as* : du. *pād-ā* etc. = *bāžhau-as* : *bāžhau-ā*), and the Greek form is even more easily taken as a remodelling. Furthermore, if the agreement of I-Ir, B-S, and Irish on $-\bar{u}$ and $-\bar{i}$ duals for masc. and fem. *u*- and *i*-stems may be taken to mean that their (analogical) creation occurred already in PIE, it is still less likely that a genuinely old $-eu-e$ somehow managed to survive into I-Ir. and Greek.

The other conspicuous non-neuter type with clear proterokinetic inflection in the singular is the class of fem. formations made with the suffix $-ih_2/-jeh_2-$ (Ved. *devī* : Gk. *δῖα* etc.). These do not clarify things decisively either. For the nom-acc duals of this type of fem. sometimes show obvious innovations (as in Greek) or have a good chance of being analogical (as in Irish, where nom. sg. *sétig* 'wife' beside du. *sétig* might simply be analogical to the *i*-stems, where sg. and du. are also homonymous).

And even if Ved. *devī* 'two goddesses' does reflect $-ih_2-iH$ (and cf. Lith. *marti* 'daughter in law' : du. *marti*), the fact that the ending is $-iH$ at all suggests the possibility that this dual may have been modelled on that of the \bar{a} -stems at an early stage

(sg. $-e-h_2$: du. $-e-h_2-iH =$ sg. $-ih_2$: du. $-ih_2-iH$). For without some reason to think that the ih_2 -stems were not always feminine, one might well suppose that they originally had the normal masc. and fem. dual ending $-e$. The zero grade suffix observable in $-ih_2-iH$ does not, therefore, suggest very strongly that masc. and fem. proterokinetic singulars had a zero grade suffix as a general rule in the nom-acc dual. The result is that if non-neuter duals ended in $-e$ in the nom-acc, we cannot tell what the structure was of a masc. or fem. nom-acc dual of a proterokinetic singular.

The general picture changes considerably if one reconstructs the ending in question not as $-e$, but as $-h_1$ or $-eh_1$ (and for parallels to a nom-acc ending of one of these shapes cf. nom. sg. $-s$ and nom. pl. $-es$). Even so, however, the question of the stem allomorphy of nom-acc duals belonging with non-neuter proterokinetic singulars remains without a decisive answer.

Assuming $-h_1$, the o -stem dual (Gk. ἵππῳ, Lith. *výru*, Ved. *vīrá*) would reflect $-o-h_1$. The Greek consonant-stem ending $-ε$ (πόδε etc.) could reflect $-h_1$ directly. The $-ā$ of Vedic consonant stems (*pād-ā* etc.) would represent the generalized ending of o -stems, as must be assumed in any case under the assumption that the ending was $-e$. At first sight, this would imply that Ved. *sūnú* : Lith. *sūnu* : OCS *syny*, reflecting $-nu-h_1$, are confirmation that nom-acc duals of proterokinetic singulars were also proterokinetic (nom. sg. $-nu-s$: du. $-nu-h_1$). Similarly, one could even consider a reconstruction $-ih_2-h_1$ for the ih_2 -stem duals Ved. *devī* : Lith. *marti* (if, again, ih_2 -stems were exclusively feminine from the beginning). But the possibility of an early analogical origin of the $-ū$ (and $-ī$) masc. and fem. u - (and i -) stem forms still cannot be excluded ($-o-s$: $-o-h_1 \rightarrow -u-s$: $-u-h_1$ and $-i-s$: $-i-h_1$). An analogical explanation of the (ih_2 -stem) Ved. *devī*, Lith. *marti* type ($-e-h_2$: $-e-h_2-iH = -ih_2$: $-ih_2-iH$) is even more difficult

to exclude, since an $-ih_2$ type that was always fem. might owe even its asigmatic nom. sg. to the $-e-h_2$ type in the first place. In addition, the very assumption of an ending $-h_1$ is difficult in Irish (*sieir* cannot reflect $-rh_1$) and impossible for Lith. *žmūne* (cf. also masc. perf. act. ptcpl. *áuguse* – Stang, *Verg. Gramm.* 222).

With an ending $-eh_1$, the $-\bar{o}$ of the o -stems (ἵπῳ etc.) would reflect pre-PIE $-o-eh_1 > \text{PIE } -\bar{o}h_1$ (cf. pre-PIE nom. pl. $-o-es > \text{PIE } -\bar{o}s$). One could then entertain the idea that the $-\bar{a}$ of Ved. *pādā* etc. goes directly back to this $-eh_1$, and that the $-\bar{e}$ seen in Gk. (πόδε), Lith. (*žmūne*), and Irish (*sieir*) is from $-eh_1$ with laryngeal loss in final position ($-eh_1 > -e$). For the phonological development (cf. § 26.6.3), one would compare $-eh_2 > -ah_2 > -\bar{a}$ in the o -stem neuter plurals of some languages (e.g. Gk. δῶρα, L. *dona*) or in \bar{a} - (eh_2 -) stem vocatives (e.g. Hom. φύμφᾶ, OCS *ženo*) and nominatives (L. *porta* etc.). For present purposes, however, the acceptability of this reconstruction of the masc.-fem. nom-acc dual ending is irrelevant, since it would require (as does the reconstruction $-e$) that $-\bar{u}$ and $-\bar{i}$ (Ved. *sūnū́*, *srutí* etc.) are analogical ($-o-s : -\bar{o}h_1 \rightarrow -u-s : -\bar{u}h_1$ and $-i-s : -\bar{i}h_1$).

§ 38.1

- * As to the further analysis of this $\hat{k}reh_2io-$, it could well be that it represents a substantivized adjective $\hat{k}reh_2i-o-$ derived at a very early stage (cf. § 26.8.6) from a locative $\hat{k}reh_2-i$. This locative, in the originally hysterokinetic paradigm of $\hat{k}rēh_2$ ‘head’, would represent the endingless locative $\hat{k}reh_2$ (§§ 26.8, 28.4 f.) with the desinence $-i$ superadded, and not the original $-i$ locative (which could theoretically have been $*\hat{k}rēh_2-i$. But cf. third addendum to § 50.5). For locatives of this structure (i.e. endingless locative plus $-i$) cf., descriptively, RV locs. *śīrśán* and *śīrśān-i* vs. inst. *śīrśān-ā́*, dat. *śīrśān-é*, g-abl *śīrśān-ás* or locs. *mūrdhán* and *mūrdhán-i* vs. g-abl *mūrdhn-ás* etc. For the derivation of adjectives in

-o- from locatives cf. § 70.2. Naturally, one could also suppose that a certain number of locative adjectives in -*io-* that were derived from -*i* locatives (e.g. Gk. πεζός 'on foot' < *pedi-o-*) led to a locative-adjectival denominative suffix -*io-*, and that it was only at this point that (nom-acc) *krēh₂* 'head' served as the basis for a *krēh₂-io-* (> *srāya-*). This would make the assumption of an actual locative *krēh₂-i* behind *srāya-* unnecessary. Semantically, one could consider the possibility that *krēh₂-io-* 'in the head' was substantivized to 'skull' and that this represents yet one more case in which a word for 'skull' has shifted to 'head'.

- § 38.2 * In the last analysis, (F)αρήν and its correspondents in Arm. (*garin* 'sheep') and Vedic (*úrā* 'sheep'-secondary *ā*-stem; cf. Hoffmann, *MSS* 1², 61 f.) could point either to a *ur̥rē(n)* /obl. *urn-* or to a *ur̥Hē(n)*. This second possibility, however, would require both that the Gk. oblique (F)αρν- is analogical and that the second compound member -ρρην- has undergone compositional laryngeal loss (§ 25.2). It therefore seems simpler at the moment to operate with *ur̥rē(n)* /*urn-*.
- § 41.2 * Root *k̑(e)r-* plus suffix -*h₂(e)s-* is, of course, also a logical possibility, but a suffix -*h₂(e)s-* cannot be supported, as far as I know, by a sufficient number of convincing data.
- § 41.3 * Unlike the case of L. *corpus*, there is no very strong indication for the Gmc. *hrefiz-* (< *k[#]rep-es-*) that presumably lies behind OE *hrif* 'womb, abdomen' that we have a secondary denominative -*es*-stem derived from a root noun at all. Gmc. *hrefiz-* might just as easily be a primary formation from a root (*k[#]rep-*) that also happens to make a root noun. But even if *hrefiz-* is denominative, it is difficult to demonstrate that it and L. *corpus* guarantee an ablauting secondary *k[#]rep-(o)s* / *k[#]rp-es-*. It is perfectly possible that the root noun in question inflected *k[#]rēp-s*

/kʰrp-és etc. (cf. Ved. inst. *kṛp-ā*, Av. g. pl. *kəhrp-am*), and that *corpus* was derived from a version of this paradigm that had generalized the zero-grade root (as in (I-)Ir: Av. acc. sg. *kəhrp-əm*), while Gmc. *hrefiz-* was (independently) derived from a root noun paradigm with generalized full grade. Avestan *xrafstra-* ‘beast of prey’ also belongs here somewhere, but it is not completely clear whether it necessarily presupposes an *es*-stem allomorph *kʰrep-s-*.

§ 44.2

- * As J. Schindler points out to me, a radical but not unthinkable solution to the problem of the semantic difference between the mass noun seen in Irish *crú* / Slavic **kry* and the singulative Avestan form (acc. sg. *xrūm* in its only occurrence) would be to suppose that Avestan *xrūm* (< *xruuam*) is not a root noun accusative, but an *a*-stem instead.

In that case, one could conjecture that from the root noun *kruh₂-* was made a possessive adjective *kruh₂-o-* ‘having (raw) flesh’. The next step would be to note that possessive adjectives sometimes come to function, in effect, as material adjectives: Hom. ἔγχεα ὀξύεοντα ‘spears made of beech’; RV *híraṇyavat* with *vásu* ‘wealth consisting of gold’ (7.94.9). In similar fashion, one could assume that *kruh₂-o-* ‘(having >) consisting of (raw) flesh’ was substantivized to Av. *xruuā-* ‘piece of flesh’. If so, *xrūm* (modified by *mušti.masanham* ‘fist-sized’) is specifically a masculine *a*-stem accusative.

- ** Perhaps another example of a non-collective root noun that makes a collective *s*-stem derivative is Ved. *vé-ḥ* ‘bird’ (pl. *váy-aḥ*) beside *vayas-* ‘fowl (collective)’. But cf. W-D 2.2.227, 3.286 f. and J. Manessy, *Subst. en -as-*, 37 (who argue for a reinterpretation of plural *váyah* as a singular collective).

§ 46.2

- * Another possibility (brought to my attention by J. Schindler) is that this *κρρ-* was meant by Apollonius as a prevocalic equivalent of **κρρεο-* (: post-

Hom. κέρας, -εος) parallel to Hom. κεραιο- (: κέρας, -αος) in κεραιο-ξόος.

§ 49.7.4

- * It is being proposed, in short, that singular oblique forms with the metrical structure (◡ – ◡) of κάρηνα / καρήνων were not created by “singularizing” κάρηνα / καρήνων themselves, but rather applying an analogical model that would both produce the desired oblique singular shapes and simultaneously result in a singular paradigm (κάρη / κάρητος / κάρητι) that was not completely abnormal as it stood (κάρη : κάρητ- = στόμα : στόματ- etc.). Standing in the way, more specifically, of the singularization of κάρηνα / καρήνων re-interpreted as thematic (i.e. standing in the way of καρήνου / *καρήνω in the first instance) were two factors: 1) As already noted in § 49.7.4, it may be that at the relatively early stage envisioned, nom-acc κάρηνα / gen. καρήνων were cohesive enough with dat-loc κρηῖάσι / inst. κρηῖ(h)άφι that the thematic reinterpretation was not possible. 2) In addition, a singular paradigm κάρη / καρήνου / καρήνω would have been less normal than κάρη / κάρητος / κάρητι – although it must be admitted that κάρη / καρήνου did descriptively come to exist eventually (*Hymns*) once κάρηνα / καρήνων were no longer taken as an *n*-stem paradigm.

On the other hand, the singularization of κάρηνα / καρήνων (when still interpreted as an *n*-stem) might have led to sg. gen. *κάρην-ος / dat. *κάρην-ι. This development failed to take place, it would seem, simply because κάρη / κάρητ- as a sg. paradigm was much better supported than κάρη / *κάρην- would have been.

- ** βέλεμνα, and old neuter *men*-stem nom-acc plural (*plur. tant.* in Homer), also eventually back-formed a singular βέλεμνον, but not before Aeschylus.

§ 49.8

- *. Although the case may be debatable, it seems that the variability shown by e.g. τὰ ὄπα (Plato *Crat* 409 c) vs. διγλήνους ὄπας (Theoc *Ep* 6.2) vs. παρὰ

τὴν ὄπα (*EM* 344.55) arose in exactly the same way. The obviously old neuter dual $h_3(e)k^{\#}-iH$ (OCS *očĭ*, Gk. ὄσσε, Arm. *ač-kʻ*) puts it beyond doubt that the root noun for ‘eye’ was neuter, and therefore shows that a masc. or fem. acc. sg. (τὸν / τὴν) ὄπα is an innovation. It would appear that this neuter root noun made a collective (neuter nom-acc plural), and it is this form in the accusative and in the meaning ‘face’ that is used by Homer and Hesiod in the expression(s) – and as such only in the expression(s) – εἰς ὄπα ἰδέσθαι / εἰκέναι / εἰσκειν. Since this isolated ὄπα (no singular) was unambiguously accusative and had a singular meaning, it was understandably re-interpreted as a masc. or fem. accusative singular later on. Cf. Schindler, *Wurzelnomen*, 105 with further references.

- § 50.3 * The RV has yet a third locative in *-an* based on the (original) *m*-stem *kṣā́(h) / jmáḥ* – namely *kṣā́man / kṣā́mani*. In this case, however, the *n*-formant is not restricted to the locative, there being a fairly well attested neuter nom-acc *kṣā́ma*. Synchronically, that is to say, there is a neuter *man*-stem *kṣā́ma / loc. kṣā́man(i)* to be recognized. Historically, one could assume in theory that there was created a locative *kṣā́m-an* (with *kṣām-* ultimately < *dhghōm-* plus the *-an* of *jm-án*) and that the nom-acc *kṣā́ma* was back-formed to this. But given that *kṣā́man* and *kṣā́mani* occur only once each in the RV while nom-acc *kṣā́ma* occurs eight times, it might be better to think of an altogether different account of the *kṣā́ma / loc. kṣā́man(i)* paradigm. One might suppose, for example, that neut. *bhū́man-* ‘earth, world’ beside fem. *bhū́-h* led to a neut. *kṣā́man-* beside fem. *kṣā́-h*.

- § 50.5 * J. Schindler has convinced me that this is not the only thinkable view of the two full grades in locatives of this kind. Since it is not possible, within the limits set by present purposes, either to develop fully a position on the status of the locative *-en*

formant (ending? postposition?) or to try drawing conclusions concerning the relative chronology of the formation of these *-en* locatives and the operation of the pre-PIE sound law(s) that produced zero grades, it may be simply noted here as a possibility that locative structures like *dhǵhém-en* (and cf. e.g. *g^(u)émbh-en* below) could be “regular” and could represent original endingless locatives affixed with a postposition *-en*, and never subsequently subjected to apophonic reduction. In that case, it may be pointed out, one still has to suppose that some locative *-en* formations were modelled on pre-existing ones, and were not themselves directly formed by the addition of the postposition (*-en*) in question to an actual endingless locative. A case like *ǵhéim-en* (see further on in § 50.5), with *ǵheim-* and not the expectable endingless locative *ǵhēm-* (to *ǵhiēm-/ǵhim-* ‘winter’) could be the result of an analogical process like *dhǵhm-és* etc.: *dhǵhém-en* = *ǵhim-és* etc.: X (= *ǵhéim-en*), since the relationship between *dhǵhm-* and *dhǵhem-*, easily (re-)interpretable as *vṛddhi* (strong stem *dh(e)ǵhōm-*), could have led to a *vṛddhi* of *ǵhim-* (whence *ǵheim-*) of the (*d̥i̯e̯u-*)/*d̥i̯u-* : *de̯i̯u-(o-)* type. On the other side, it could be supposed—if the double full-grade (*dhǵhém-en*) structure really is original—that the by-form with only one full grade (*dhǵhm-én*) was called into existence by the re-interpretation of the *-en* as a locative *ending*, comparable in status to *g-abl. -es* and *dat. -ei* (on *loc. -i* cf. third addendum to § 50.5). The installation of the normal weak stem allomorph before *-en* would then be immediately understandable. All of this would also apply to locatives in *-er*. Finally, the double full grade of normal endingless locatives (alluded to a little later in § 50.5) could still result from the influence of locatives in *-en* and *-er*. The entire point, however, remains tangential. For however we explain the double full grade of *-en*, *-er*, and endingless locatives, it is still not sure whether a suffixless deloca-

tival derivative like *dhǵhem-ō(n)* owes its *e*-grade to the locative from which it was derived or not (cf. § 50.1 f.).

- ** As was mentioned above (first addendum to § 50.5), one may in principle view double full-grade locatives in *-en* and *-er* (*g^(*)émbh-en* > *gámbhan*, *ǵen-er* > RV *vanar-* 'in the forest') either as the most original versions of the two types (endingless locative plus postposition with no apophonic reduction), or as analogical formations in which an endingless locative has been recharacterized through the superaddition of *-en* or *-er*, these being formants which in that case would have been preceded in the original state of affairs by reduced stem allomorphs (types *dhǵhm-én* > RV *jmán*, *h₂u(s)-s-er* > RV *uṣar-*). In either case, however, the very first double full-grade *-en* and *-er* locatives that were ever created should consist, descriptively, of a substantival stem allomorph identical to the endingless locative, and *-en* or *-er* after that. As it stands, however, *vasar-* does not conform to this description. It is virtually certain that the endingless locative of the *s*-stem (ved. *uṣāh*, Gk. ἡώς etc.) in question was *h₂us-és* (cf. § 26.6.4 and RV nom. *uṣāh* < *h₂us-ōs* g-abl. *uṣāh* < *h₂u(s)-s-és*, but loc. *uṣási* < endingless loc. *h₂us-és* plus *-i*). It seems reasonable to suspect for this reason that *vasar-*, although it certainly belongs in the general category of locatival *-er* formations with two full grades, was not one of the original layer of examples. The "misplacement" of its first full grade is instead reminiscent of what can be observed in the case of *ǵhejm-en* (> Ved. *héman*), where it was noted (first addendum § 50.5) that some double full-grade *-en* locatives show a neo-full grade (of one sort or another) in the substantival stem preceding the *-en*, and that this results from their having been created analogically (perhaps already in PIE) on the model of older examples of the *-en* locative type (no matter, again, how these older examples were themselves first formed).

Although one may doubt that *vasar-* shows in its *vas-* something that is simply a *vǵddhi* form of I-Ir *uš-* ‘dawn’, it does appear that the procedure by which it was created was an analogical one, and was followed precisely in order to produce a double full grade in this form.

- *** *h₂eǵer-i* is not, of course, endingless as it stands. It would only be implied that some locatives in *-i* (type RV *áhan-i* etc.) represent endingless locatives (RV *áhan* etc.) that have been recharacterized by the *-i* ending (originally used with a weak stem in such a view), but have retained the original stem ablaut of the endingless type (W-D 3.273 ff.). Alternatively, one could maintain that *-i* as a loc. ending was originally not exactly parallel in its usage to other sg. oblique endings (g-abl. *-(e)s* or dat. *-ei*), but instead was regularly added, from the first, to a stem allomorph that was one grade “stronger” in the predesinential element than the allomorph that preceded the g-abl. or dat. endings (W-D *loc. cit.*). In that case, one would say that endingless and *-i* locatives both originally called for the same special stem-shape, while weak-case *-i* locatives (AV *áhni*, e.g.) are an innovation, and one would discard the idea that, in the present case, a **h₂eǵer* (endingless) beside a hypothetical **h₂eǵir-i* (weak case) resulted in the transformation of **h₂eǵir-i* to *h₂eǵer-i*. But whether one assumes that PIE *h₂eǵeri* ‘early’ represents an endingless loc. with superadded *-i* or that locatives with *-i* simply had that ending affixed to a stem-shape that had always been identical to that of the endingless locative, *h₂eǵeri* provides either direct or indirect evidence of an endingless (as opposed to *-en* or *-er*) locative with two full grades.

§ 54.3

- * The difficulty here is that even from the Latin situation alone it is clear that *aruom* ‘field’/pl. *arua* ‘fields, region’ is the substantivized neuter (and *arua* ‘field’ the substantivized feminine) of the (quasi-participial) adjective *arnos* ‘cultivated’ (Plaut. *non*

aruos hic sed pascuost ager—*Truc* 149). In that case, however, the Latin forms merely support a deverbative $-uo$ -adjective, and it is far from clear that a h_2erh_3uo - ‘ploughed’ really presupposes a u -stem h_2erh_3u -. But without some evidence (at least indirect) of this u -stem, the segmentation h_2erh_3u - has no support.

- § 57.9 * On the details of the reduction of k_2rh_2 -es- to Gk. k_2rh_2 -s- and I-Ir $śrH$ -s- before the $-n$ -formant in the oblique cf. § 58.4.
- § 58.2 * The statement that the word for ‘ear’ served as the basis for PIE terms for ‘cheek’ or ‘temple’ is meant only to imply that the ear is a prominent enough feature of the side of the head or skull that the cheek and temple could be referred to by a compound (*par-ams-iō*- ‘beside the ear’) that named these less conspicuous parts after their proximity to the more conspicuous one.
- § 66.5 * I am grateful to J. Schindler for suggesting to me a semantic account of ἡμίκραια that will allow it to be even more closely associated with the Homeric -κραια compounds that mean ‘horned’. One could suppose that the bisected head of a cow or bull that had been sacrificed was called, in the very first instance, a ἡμίκραια κεφαλή in Attic: ‘a head with only one horn’ (< ‘a head having only half the usual number of horns’). This then became simply ἡμίκραια, and changed very slightly in meaning to ‘half a head’. At this point, the term could be used to refer to the bisected head even of sacrificial animals (pigs, for instance) that do not have horns.
- § 69.3.1 * Cf. Sommer, *IF* 36, 169 ff., 184, 190, 219 ff., who shows that at least among u -stem adjectival formations (simplicia in $-u$ - vs. simplicia in $-Cu$ - vs. bahuvrihis with a u -stem second member), the use of $-ih_2$ to form endocentric feminines is severely restricted, appearing only in simplicia in $-u$ -.

Literature

cited in abbreviated form

- AGI: *Archivio glottologico italiano* (Roma-Torino-Firenze, 1873 ff.).
- Bartholomae AirW: Chr. Bartholomae, *Altiranisches Wörterbuch* (repr. Berlin, 1961).
- BB: *Beiträge zur Kunde der idg. Sprachen*, hrsg. von A. Bezzenger u. a. (Göttingen, 1877–1907).
- Beekes Development: R. S. P. Beekes, *The Development of the Proto-Indo-European Laryngeals in Greek* (The Hague–Paris, 1969).
- Beeler Studies: *American Indian and Indoeuropean Studies*. Papers in honor of Madison S. Beeler (The Hague–Paris–New York, 1980).
- Benveniste Origines: E. Benveniste, *Origines de la formation des noms en indo-européen* (Paris, 1935).
- Berneker SEW: E. Berneker, *Slavisches etymologisches Wörterbuch* (Heidelberg, 1908–).
- Brandenstein-Mayrhofer Handbuch: W. Brandenstein and M. Mayrhofer, *Handbuch des Altpersischen* (Wiesbaden, 1964).
- Brugmann Grdr²: K. Brugmann, *Grundriß der vergleichenden Grammatik der idg. Sprachen* (Straßburg, I, II 1–3, 1897; 1906; 1909–1911; 1916).
- BSL: *Bulletin de la Société de linguistique de Paris* (Paris, 1868 ff.).
- Buck GD: C. D. Buck, *The Greek Dialects* (Chicago–London, 1955).
- Buck Synonyms: C. D. Buck, *A Dictionary of Selected Synonyms in the Principal Indo-European Languages* (Chicago, 1949).
- Campbell OEG: A. Campbell, *Old English Grammar* (Oxford, 1959).
- Chantraine: P. Chantraine, *Dictionnaire étymologique de la langue grecque. Histoire des mots* (Paris, 1968–1980).
- Chantraine DELG: = Chantraine.
- Chantraine Formation: P. Chantraine, *La formation des noms en grec ancien* (Paris, 1933).
- Chantraine Gramm: P. Chantraine, *Grammaire homérique* (Paris, 1. 1958³; 2. 1963).
- Chantraine Morphologie: P. Chantraine, *Morphologie historique du grec* (Paris, 1961²).
- Danielsson Gramm. und Etym. Studien I: O. A. Danielsson, *Grammatische und Etymologische Studien I* (Upsala Universitets Årsskrift, Upsala, 1888).
- Docs²: M. Ventris and J. Chadwick, *Documents in Mycenaean Greek* (Cambridge, 1973²).
- Documents²: = Docs².
- Duchesne-Guillemin CA: J. Duchesne-Guillemin, *Les composés de l'Avesta* (Paris, 1936).
- Ebeling Lex: *Lexicon Homericum* edidit H. Ebeling, 1–2 (repr. Hildesheim, 1963).
- EFL²: *Evidence for Laryngeals*, ed. W. Winter (The Hague, 1965).
- Egli Heteroklisie: J. Egli, *Heteroklisie im Griechischen mit besonderer Berücksichtigung von Gelenkheteroklisie* (Zürich, 1954).
- E-M: A. Ernout et A. Meillet, *Dictionnaire étymologique de la langue latine. Histoire des mots* (Paris, 1959⁴).
- Ernout-Meillet DELL: = E-M.
- Flex. und Wortbildung: *Flexion und Wortbildung*. Akten der V. Fachtagung der Indogermanischen Gesellschaft, hrsg. von H. Rix (Wiesbaden, 1975).
- Fraenkel Agamemnon: Aeschylus, *Agamemnon*, ed. E. Fraenkel (Oxford, 1950).
- Fraenkel LEW: E. Fraenkel, *Litauisches etymologisches Wörterbuch* (Heidelberg, 1955).

- Frisk: Hj. Frisk, *Griechisches etymologisches Wörterbuch* (Heidelberg, 1960–1972).
- Frisk *GEW*: = Frisk.
- Frisk *Nominalbildung*: Hj. Frisk, *Zur indoiranischen und griechischen Nominalbildung* (Göteborgs Kungl. Vetenskaps-och Vitterhets-samhälles Handlingar, Femte Följden, Ser. A, Band 4, No. 4. Göteborg, 1934).
- Geldner: K. F. Geldner, *Der Rig-Veda aus dem Sanskrit ins Deutsche übersetzt und mit einem laufenden Kommentar versehen*, 1–3 (*Harvard Oriental Series*, vols. 33–35. Cambridge, 1951).
- Gershevitch *AHM*: I. Gershevitch, *The Avestan Hymn to Mithra* (Cambridge, 1959).
- GGA*: *Göttingische Gelehrte Anzeigen* (Berlin–Göttingen, 1739 ff.).
- Glotta*: *Glotta*. Zeitschrift für griech. u. lat. Sprache (Göttingen, 1909 ff.).
- Hoffmann *Aufsätze*: K. Hoffmann, *Aufsätze zur Indoiranistik* (Wiesbaden, 1. 1975; 2. 1976).
- HSCP*: *Harvard Studies in Classical Philology* (Cambridge–London, 1890 ff.).
- IF*: *Indogermanische Forschungen* (Strassburg bzw. Berlin, 1982 ff.).
- India Antiqua*: *India Antiqua*. A volume of oriental studies presented to J. P. Vogel (Leiden, 1947).
- Jackson *LHEB*: K. Jackson, *Language and History in Early Britain* (Cambridge, 1953).
- JAOS*: *Journal of the American Oriental Society* (New Haven, 1849 ff.).
- Jónsson *Ordbog*: F. Jónsson, *Ordbog* ... (København, 1926–1928).
- Kellens *Noms-racines*: J. Kellens, *Les noms-racines de l'Avesta* (Wiesbaden, 1974).
- Kent *OP*: R. G. Kent, *Old Persian* (New Haven, 1953²).
- Kluge *Stammbildungslehre*³: F. Kluge, *Nominale Stammbildungslehre der altgermanischen Dialekte* (Halle, 1926³).
- Kn Tablets*: J. Chadwick, J. T. Killen, and J.-P. Olivier, *The Knossos Tablets* (Cambridge, 1971⁴).
- Kronasser *Etym*: H. Kronasser, *Etymologie der hethitischen Sprache I* (Wiesbaden, 1966).
- Kronasser *VLFH*: H. Kronasser, *Vergleichende Laut- und Formenlehre des Hethitischen* (Heidelberg, 1956).
- Kuiper *Notes*: F. B. J. Kuiper, *Notes on Vedic Noun-inflection* (*MKNAW* 5.4, 1942).
- Kuiper *Shortening*: F. B. J. Kuiper, *Shortening of Final Vowels in the Rigveda* (*MKNAW* 18.11, 1955).
- Kurylowicz *Apophonie*: J. Kurylowicz, *L'apophonie en indoeuropéen* (Wrocław, 1956).
- KZ*: *Zeitschrift für vergleichende Sprachforschung auf dem Gebiete der idg. Sprachen*, begr. von A. Kuhn (Berlin–Gütersloh–Göttingen, 1852 ff.).
- Latte *Hsch*: *Hesychii Alexandrini Lexicon recensuit et emendavit* Kurt Latte (Hauniae, 1953–).
- Lejeune *Adv-ΘEN*: M. Lejeune, *Les adverbes grecs en -θεν* (Bordeaux, 1939).
- Lejeune *Phonétique*²: M. Lejeune, *Phonétique historique du mycénien et du grec ancien* (Paris, 1972).
- Leskien *Bildung*: A. Leskien, "Die Bildung der Nomina im Litauischen" in A. Leskien, *Slavische und Baltische Forschungen II* (Leipzig, 1975), 7 ff. = *Abhandlungen der Königlich Sächsischen Gesellschaft der Wissenschaften*, 12 (Leipzig, 1891), 153 ff.
- Leumann *HomW*: M. Leumann, *Homerische Wörter* (Basel, 1950).
- LGS*: L. Ziehen, *Leges Graecorum sacrae e titulis collectae* (Leipzig, 1906).
- Manessy *Substantifs en -as-*: J. Manessy (-Guitton), *Les substantifs en -as- dans la Ṛk-Saṃhitā* (Paris, 1961).
- Mayrhofer *KEWai*: M. Mayrhofer, *Kurzgefaßtes etymologisches Wörterbuch des Altindischen* (Heidelberg, 1953–1980).

- Meillet *Esq*: A. Meillet, *Esquisse d'une histoire de la langue latine* (Paris, 1966³).
- Meillet *Introduction*⁸: A. Meillet, *Introduction à l'étude comparative des langues indo-européennes* (Paris, 1937⁸).
- Meillet-Vendryes *Traité*: A. Meillet and J. Vendryes, *Traité de grammaire comparée des langues classiques* (Paris, 1948²; repr. 1966).
- Meister *HK*: K. Meister, *Die homerische Kunstsprache* (Leipzig, 1921).
- Meisterhans *Gramm*: K. Meisterhans, *Grammatik der attischen Inschriften*. Dritte vermehrte und verbesserte Auflage, besorgt von E. Schwyzer (Berlin, 1900; repr. Dublin-Zürich-Vaduz, 1971).
- Meisterhans-Schwyzler: = Meisterhans *Gramm*.
- Melchert *Abl & Inst*: C. Melchert, *Ablative and Instrumental in Hittite*. Diss. (Harvard University, 1977).
- MKNW: *Mededelingen der Koninklijke Nederlandse Akademie van Wetenschappen*, Afd. Letterkunde. Nieuwe Reeks (Amsterdam).
- M-L: W. Meyer-Lübke, *Romanisches etymologisches Wörterbuch* (Heidelberg, 1935³).
- MNHMHΞ XAPIN: MNHMHΞ XAPIN. Gedenkschrift Paul Kretschmer, 1-2 (Wien, 1956-1957).
- MSS: *Münchener Studien zur Sprachwissenschaft* (München, 1951 ff.).
- MU: H. Osthoff and K. Brugmann, *Morphologische Untersuchungen auf dem Gebiete der idg. Sprachen* (Leipzig, 1878-1910).
- Neu *Lok*: E. Neu, *Studien zum endungslosen „Lokativ“ des Hethitischen* (Innsbruck, 1980).
- Noreen *Gramm*: A. Noreen, *Altisländische und altnorwegische Grammatik* (Halle, 1923⁴).
- NTS: *Norsk Tidsskrift for Sprogvidenskap* (Oslo, 1928 ff.).
- Otrębski: J. Otrębski, *Gramatyka języka litewskiego* 1-3 (Warszawa, 1954-1965).
- Pearson: *The Fragments of Sophocles*, ed. A. C. Pearson (repr. Amsterdam, 1963).
- Pedersen *Tocharisch*: H. Pedersen, *Tocharisch vom Gesichtspunkt der indoeuropäischen Sprachvergleichung* (*Det Kgl. Danske Videnskabernes Selskab. Historiskfilologiske Meddelelser* 28.1, 1941).
- Pedersen *VGKS*: H. Pedersen, *Vergleichende Grammatik der keltischen Sprachen* (Göttingen, 1. 1908; 2. 1911).
- Peters *Untersuchungen*: M. Peters, *Untersuchungen zur Vertretung der indogermanischen Laryngale im Griechischen* (Wien, 1980).
- PLF: *Poetarum Lesbiorum Fragmenta*, ediderunt E. Lobel et D. Page (Oxford, 1955).
- PMG: *Poetae Melici Graeci*, edidit D. L. Page (Oxford, 1962).
- Pokorny *IEW*: J. Pokorny, *Indogermanisches Etymologisches Wörterbuch* (Bern-München, 1959, 1969).
- RhM: *Rheinisches Museum für Philologie*, neue Folge (Frankfurt am Main, 1842 ff.).
- Richardson *HHDem*: *The Homeric Hymn to Demeter*, ed. N. J. Richardson (Oxford, 1974).
- Risch²: E. Risch, *Wortbildung der homerischen Sprache*. Zweite, völlig überarbeitete Auflage (Berlin-New York, 1974).
- Risch *Wortbildung*²: = Risch².
- Rix *Hist. Gramm. Gr.*: H. Rix, *Historische Grammatik des Griechischen* (Darmstadt, 1976).
- RPh: *Revue de Philologie*, 3. sér. (Paris, 1927 ff.).
- Ruijgh *Études*: C. J. Ruijgh, *Études sur la grammaire et le vocabulaire du grec mycénien* (Amsterdam, 1967).
- St. Joseph *Problems*: L. Saint Joseph, *Problems in the Development of the Indo-European Laryngeals in Celtic*. Diss. (Harvard University, 1980).

- Schindler *Wurzelnamen*: J. Schindler, *Das Wurzelnamen im Arischen und Griechischen*. Diss. (Würzburg, 1972).
- Schmidt *Neutra*: J. Schmidt, *Die Pluralbildungen der indogermanischen Neutra* (Weimar, 1889).
- Schulze QE: W. Schulze, *Quaestiones Epicae* (Gütersloh, 1892).
- Schwyzer DGEp: E. Schwyzer, *Dialectorum Graecarum exempla epigraphica potiora* (Leipzig, 1923; repr. Hildesheim, 1960).
- Schwyzer GG: E. Schwyzer, *Griechische Grammatik*, I (München, 1939).
- Seebold *Idg Halbvokale*: E. Seebold, *Das System der indogermanischen Halbvokale* (Heidelberg, 1972).
- Senn: A. Senn, *Handbuch der litauischen Sprache I: Grammatik* (Heidelberg, 1966).
- SMEA: *Studi micenei ed egeo-anatolici* (Roma, 1966 ff.).
- Sommer *Nominalkomp*: F. Sommer, *Zur Geschichte der griechischen Nominalkomposita* (*Abhandlungen der Bayerischen Akademie der Wissenschaften, Philosophisch-historische Klasse*, Neue Folge, Heft 27. München, 1948).
- Specht *Ursprung*: F. Specht, *Der Ursprung der Indogermanischen Deklination* (Göttingen, 1944).
- Die Sprache: Die Sprache*. Zeitschrift für Sprachwissenschaft (Wien, 1949 ff.).
- Stang VGBS: Chr. Stang, *Vergleichende Grammatik der baltischen Sprachen* (Oslo, 1966).
- StBT: *Studien zu den Boğazköy-Texten* (Wiesbaden, 1965 ff.).
- Stud. Myc.: *Studia Mycenaea*. Proceedings of the Mycenaean symposium, Brno, April 1966. Ed. A. Bartoněk (Brno, 1968).
- Studia Pagliaro: Studia classica et Orientalia Antonio Pagliaro oblata* ... (Roma, 1969).
- Szemerényi *Einführung*: O. Szemerényi, *Einführung in die Vergleichende Sprachwissenschaft* (Darmstadt, 1970).
- Szemerényi *Numerals*: O. Szemerényi, *Studies in the Indo-European System of Numerals* (Heidelberg, 1960).
- Thumb-Scherer GD: A. Thumb, *Handbuch der griechischen Dialekte*, Zweiter Teil. Zweite erweiterte Auflage von A. Scherer (Heidelberg, 1959).
- Trautmann BS/W: R. Trautmann, *Baltisch-Slavisches Wörterbuch* (Göttingen, 1923).
- Turner CDI-AL: R. L. Turner, *A Comparative Dictionary of the Indo-Aryan Languages* (Oxford, 1962–1966).
- Vendryes *Lexique*: J. Vendryes, *Lexique étymologique de l'irlandais ancien* A, B, M-N-O-P, R-S, T-U (Dublin, 1959–1981).
- Wackernagel *Kl Schr*: J. Wackernagel, *Kleine Schriften* 1–2 (Göttingen, 1955).
- Wackernagel *SpU*: J. Wackernagel, *Sprachliche Untersuchungen zu Homer* (Göttingen, 1916).
- Wackernagel *Verm. Beitr.*: J. Wackernagel, „Vermischte Beiträge zur griechischen Sprachkunde“ in *Programm zur Rektoratsfeier der Universität Basel*, 3–62. Also in *Kleine Schriften* (Göttingen, 1955), 764–823.
- Walde-Hofmann LEW: = W-H.
- Wartburg: W. von Wartburg, *Französisches etymologisches Wörterbuch* (Bonn, 1928–1969).
- W-D: J. Wackernagel, *Altindische Grammatik* (Göttingen, I 1896; Nachträge von A. Debrunner 1957; II 1, 1905; Nachtr. 1957; II 2; 1954; III 1929–1930).
- W-D AiGr: = W-D.
- West IEG: *Iambi et elegi Graeci ante Alexandrum cantati*, edidit M. L. West (Oxford, 1. 1971; 2. 1972).
- W-H: A. Walde, *Lateinisches etymologisches Wörterbuch*. 3. Aufl. von J. B. Hofmann (Heidelberg, 1938–1954).

Index of Words and Formants

with references to page numbers

Greek

Mycenaean

akarano 222, 223, 228, 232
anowe 92, 207
aikasama 271
iqijjo 131⁵⁵
-kara 55, 94, 223
karaapi 55, 183 ff., 222 f.

-karaapi 183, 220
-karaore 24, 220 f., 222 ff., 234, 237 ff., 246
kera 36-45, 46 f., 104 ff., 107 ff., 122,
134 f., 151
kera(i)japi 39 ff., 122
kowo 151
otuwowe 92

Alphabetic

-ǎ (< -eh₂ #) 80, 285
άβοατί 80
άγκάς : άγκών 24⁷
άγκια : -άγκια 228
άδην 51¹⁰
άερσα/άέρση 125 f.
άήρ 236 f.
αίλα/μαίλα 50⁶
αίσα : αίσυλος 52¹⁰
αίχημή 271
άκαρης 71⁶⁷
άκαρος 72 f., 103
άκέραιος 69 f., 166
άκηράσιος 69⁵⁸
άκήρατος 68
άκήριος 68
άλειφα 52¹⁰, 54^{17, 18}
'Αλθαι-/’Αλθη- 56, 58
-αλλο- 205¹⁸
-αλλω : -αλμός 206¹⁸
άλυκρός 74
άμαξα 233
άμφίαλος 89
άμφιέλισσα 229
άμφως 92

άναμωτί 80⁹⁶
-άνειρα 87, 229, 241
’Αντήνωρ 87¹¹⁵, 229
άντιάνειρα 87, 229
άντικρύ/άντικρυς 15, 82,
84, 88, 90, 91, 135, 150
-αντροκυ 15³⁰
άπείρων 91, 92, fem. 240
άπηνής 89
άργυρόπεζα 229
άριστον 49, 190
άρουρα 21³, 33, 203
-άρουρος 87
-άς *adverbs* 24⁷
άστήρ : άστρα 164¹⁰, 280
άστράγαλος 12
αὔος 271
αὔρα 236
αὔριον 236, 243
αὐχμός 271
βέλεμνα 52¹⁰, 288
βελόνη 255
βλαισός 58
γαῖα/γῆ 49 f.⁶
-γένεια 229

γέρας 26, 140
-γηρος 154
γνύξ 267 f., 269, 272
γνυ-πετόν, -πτεῖν 267 f.
γόνυ 15, 54, 77, 201
γο(υ)ν-/γο(υ)νατ- 204
γυῖον, -α 59
-γυ(ι)ος 59
γυναι- 57, 58
δείλακρος 73, 74
δέλλιθες 255
δέρος/δέρας 151
δία 147¹⁷
δίκραира 226, 233
δίκραιρος 225
δίκροος 4, 9, 15, 32¹⁵, 100³⁶,
226
δόρυ 15, 54
δρυ- 63
δροόν 15
δρυτόμος 63
-ε *dual* 131, 282 ff.
έγγύ-ς, -θεν, -θ 59, 82, 83 f.,
88, 90, 135; έγγύη: -άω

- 59; ἐγγυαλίζω 59; (ἐχ-,
ὕπ-) ἐγγυος 59
ἐγκαρος 72, 103, 107 ff.
ἐγκάς : ἐγκατ- 247
ἐγκυτί 82
ἐέρση 125 f.
ἐθειραι : ἐθειρα 228¹²
εἵκοσι/ΐκατι 80
ἐκητί 80⁹⁶
ἐκποδών 82
ἐλεφαίρωμαι 206¹⁸
ἐλπος/ἐλφος 145
-(h)εν(αι) *infinitive* 198⁵
ἐνθεος 89
ἐννυχος/ἐννύχιος 86
ἐπαρουρος 87
ἐπικαρ 75 ff., 85 f., 90 ff.,
103 f., 107 ff., 134, 137,
261 ff.
ἐπικρατίδες 58
ἐπίφρων 89
εὐθύ(ς) 84
εὐκραιρα 220, 224 ff.,
232 f., 234, 239 ff.
εὐλείμων *fem.* 240

ἦαρ 123
ἦμι- 233, 245
ἡμίκραιρα 19, 25, 30, 220,
224 ff., 229 ff., 233,
234 f., 293
ἦρι 190, 236
ἥριος 236, 243
ἡριγένεια 229
-ης *fem.* / -εια *fem.* 240
ἦώς 127

θαλυκρός 74
Θηβα-/Θηβαι- 57, 58

ἴγκρος 72 ff., 96, 103,
107 ff., 136 f.
ἰθα-/ἰθαι- 56
ἰθύ(ς) 84
-ιλο- 205 f.¹⁸
ἰνίον 165
ἰοχέαιρα 241 f., 276
(F)ίς 66⁵³

ἰσχίον 165
ἰσχνός 271⁹

καῖρος 71⁶⁷
κάρα· αἶξ ... 156 f.
κάρα 19, 21, 22, 28, 31,
48 ff., 61, 76, 103, 105,
106, 107 ff., 121 f.,
123 ff., 134, 223
κάρα 'heads' 182, 199¹⁰
κάρα, κράτ- 195-218
κάρη 58²⁹, 177³²
κάρηαρ 54
καρήατ- 54, 179 ff.
κάρητ- 55, 171 ff.
κράτ- 22, 25, 28, 76, 77,
98, 105, 159 ff., 177
κρατ- 50⁶, 177 f.
κράτεσφι 183
κρητ- 177³²
κάραβος 71⁵
καραβίς 71⁵
καραδοκῶ 58, 60, 165¹²
καριβαράω 56, 60
κάραννος 50⁶, 166, 170 f.
κάρανος 166, 245
καρανώ 25⁹, 166, 171²¹
καράρα 166, 221, 235²¹,
244, 246
καράτομος 58
καρδία 90
καρηβαρέω/-ής 55
καρηβαρία/η, -ιάω 55, 60
κάρηνα 25, 76, 77, 168 ff.,
223, 228
καρήνου 169, 172, 175 f.
καρήνους 169
-καρηνο- 167, 228
καρίς 71⁵
κάρνη 166
κάρνος 6, 9, 11, 13
(ἄ-, ἔγ-)καρος 72, 103, 107 ff.
κάρτα : καρται- 56
κάρτην 6 f.
κατωκάρα 89, 94, 167
κεραία 226, 232
κεραίδες 71⁵
κεραίζω 66 ff., 166

κεραῖς 71⁵
κεραῖτις 71⁵
κεράμβηλον 71⁵
κεράμβυξ 71⁵
κερανίζαι/κρανίζαι 113¹⁵
κεραός 1, 154³⁰, 155 f.
κέρας· κεφαλῇ 38³⁰
κέρας 1, 19, 20, 21, 22,
26 ff., 105, 139 ff.,
149 ff., 152 ff.
κέρᾱ 'horn' 44 ff.
κέρας, κερᾶτ- 152 f., 155
κέρας, κερᾶτ- 182
κεραο(ξόρος) 153
κερε(αλκῆς) 153 f.
κερο- 153
-κερᾱ-/κερος 154
-κερατ(ο)- 155
-κερης 49 f.⁶, 155
-κερως 38³⁰, 50⁶, 154 f., 156
κέρναι 9²²
κεφαλίς 226¹¹
κῆρ 66 ff.
κόλυμβος/-ίς 71⁵
κόνις : κονίω 145
κόρυδος 9, 14, 17, 251
κόρυμβα 2³, 9, 226, 232
κορύνη 9²²
κορύπτω 9, 239
κόρυς 9
κορυφή 9, 239
κραγγών 3³, 9
κράγιον 3³, 59³¹, 61
κρα(ι)αίνω/κραίνω 60, 63,
165 f., 168¹⁴
κραιπάλη, -παλάω 24⁷, 60
-κραιρα 224 ff.
κρανία 166¹³
κρανίον 20, 25, 48, 165
-κρανιο- 50⁶
Κρανο- 50⁶
-κρανο- 50⁶, 167, 228, 232,
245
-κραρο- 235²¹, 244 f.: ναύ-
κραρος 24, 30, 167,
221; ναύκληρος 221,
245; ναύκληροι 221;
(Λ)ακραριδας 221, 245

- κράσπεδον 24⁷, 61, 71
 κραστήρια 24⁷
 κράτος 141
 κρέας 26, 119, 127, 140, 150 f.
 κρήνυος 59 f.
 κρήδεμνον 58 ff., 136
 (κατὰ, ἀπὸ) κρήθεν 74 f.
 -κρο- 73 f.
 κτέρεα : κτερεῖζω 70
 κύδος 141
 κυδιάνειρα 228, 241
 κῶας/κῶος 151
 κωλή 233
 κῶλον : κωλήν 191, 238

 λα-/λαι- 56
 λαθι- 57²⁴
 λαιδρός 58
 (Λ)ακραριδας (*Boe.*) 221, 245
 λευκρός 73
 λήθ-/λαίθ-αργος 57

 μαῖα 50⁶
 μακρός 250
 μάλθη : μάλθων 257
 μελάγκραιρα 38³⁰, 225¹⁰
 μελεῖστί 80
 μένος : εὐμενής 91
 μεσ(σ)ηγύς 84, 274
 Μετάνειρα 87¹¹⁵
 μετώπιον 180
 μέχρι 82
 μηρός : μήρα 280
 μηρός : μηρία 165
 μητροπάτωρ 232¹⁷, 238
 μιαίνω 56
 μαι (*Cyren.*) 56
 μιαρός : μαι-/μιη- 56, 58
 -μο- 271

 ναύ-κλαροι 221; -κληρος 221, 245; -κλαρος 24, 30, 167, 221
 νέαξ 73
 νεαρός 73
 νέκταρ 80

 νεογνός 72
 νέωτα 83¹⁰⁶
 νύμφα 80, 285
 ὄκταλλος 205 f.¹⁸
 ὄμμα 206¹⁸
 ὀμφαλός 190
 ὄνομα 52¹⁰
 ὀπτίλος 205 f.¹⁸
 ὄργυια/ὀρόγυια 147¹⁷ : ἐν-
 νεόργυιος 228
 ὀρείκτιτος 57
 ὀρθόκερως 38³⁰
 ὀρθόκραира 19, 20, 21, 25, 30, 105, 167, 220, 224 ff., 232 f., 234, 239 ff.
 ὅσσε 150, 204
 ὀστέον 134
 οὖς, οὖατ- 53¹², 54, 77, 92, 196, 201, 207, 210 ff., 213
 ὀφθαλμός 205 f.¹⁸
 ὀφρὺς 66⁵³
 -οψ/-ωψ 150, 204
 ὀψις 206¹⁸

 παλύνω 51¹⁰
 παρήϊον 207, 214
 πεδίον, πεζός 50⁶, 95, 280
 πεῖραρ/ς 54, 91, 92
 πέος 213³⁵
 πέρυσι 83
 πηδόν 278
 πείρα 147¹⁷, 241
 πολύρρηγες 136.
 -πο(υ)ς : -πεζα 229, 233, 240
 πότνια : -ποινα 242
 πρὸς/πρές 65⁵⁰, 271
 προσώπατα, -ασι 180 f.
 πρόφρων, πρόφρασσα 240
 πρόχυν 82, 84, 91, 267 ff.
 πτέρυξ 2¹, 13
 Πυλογενής 57

 ῥα 49 f.⁶
 ῥαιβός 58
 ῥίζα : -ρίζος 229, 234

 σάκος : -σακῆς 150
 σαυκρός 74
 σήραμβος 7¹⁵
 σκέπας : -σκεπῆς 50⁶, 154³¹, 155
 σῶρ 119, 123, 128
 στόμα : στωμύλος 52¹⁰

 ταλα-/ταλαι-/τλα-/τλαι- 56, 58
 ταναός 112¹²
 τανύκραιρος 225, 232
 τέκμαρ/τέκμωρ 119, 120
 τέκτων 51¹⁰
 τέρας 54
 τέρμα/τέρμων 120
 -τῖ *adverbs* 80
 τράπεζα 229, 233
 τρίπους 229, 233

 ὕδωρ 119, 123, 127 f.
 ὕδει 203¹⁶
 ὕμην 52¹⁰, 120, 127
 ὕπαιθρος 72
 ὑπερήνωρ 87¹¹⁵
 ὑπερθυμος 89
 ὑπερμορα 88
 ὑπόγυ(ι)ος 59
 ὑπουράνιος 87

 φαλακρός 73
 φαλαντίας 73
 φυγή/φύζα 49 f.⁶

 χαλαρός : χαλι-/χαλαι- 56, 58
 χαμαι- 57
 χεῖμα 52¹¹
 χειρὶ 82
 χθών 187
 χρῆος/χρεῖος/χρέος 64

 ψαυκρός 74

 -ω *dual* 282 ff.
 -ωψ 150, 204
 ὦπα 197, 204, 288 f.

Armenian

ačk' 131, 150, 204
akn 201
ariun 6

harawownk' 21³, 33, 122³²,
203
heru 83
merj 82

oskr 21³
sar 111
sarik' 71⁶⁷
unkn 53¹², 77, 92, 207

Indo-Iranian

Sanskrit

ákṣi, akṣṇ- 53, 150, 161,
197f.
akṣí 204ff.
ádhinirñij- 89
ádhyakṣa- 89
ánupatha- 72, 88
ántaspatha- 87
ápnas- 145
apvā- 276
ápsas- 141⁸
abhijñú 89, 90, 272
abhídyu- 87
abhinabhyám 87
abhikṣam 206¹⁹
ásta- 33
ásthi, asthn- 11, 53, 77, 161,
196, 202
asn- 161
ásmṛtī (inst.) 80
-ā/-au duals 131, 283ff.
āyasā- : āyas- 115
āyu, yóh : yoṣā, yóṣan-, yo-
śít- 143f.
ās(n)-, āsán : āsíya- 6, 11,
28f., 53, 81, 161, 165,
196, 198, 201, 204, 214
íśuhasta- 276
-ī dual 283ff.
udāpyām 87
udn- 161
údbāhu- 89
úras- 141
uṣar- 190, 236f.
usrā-, -ā 236, 243f.
-ū dual 283ff.

údhar, údhan- 92
: -ūdhā 92
: -ūdhan- fem. / -ūdhn-
ī- fem. 240
ṛtāvan-/ṛtāvarī 241
-e dual 131
karúkara- 5⁸
kraviṣ- 26, 119, 127, 140, 150f.
kṣaṇa- 206¹⁹
kṣāmi 188f.
kṣāman- 289
khām 66⁵³
gabhi- : ga(m)bhīrá- 189;
gāmbhan 188⁶⁵, 189;
gambhāra- 189⁶⁸
gír 66⁵³
gaurī (loc.) 81¹⁰⁰
ghṛtāsnu- 91
cākṣmā- 278
jā- 66⁵³
jānu 53¹⁶, 88, 91
: -jñu- 272
jū- 66⁵³
jm-āh/ā 188
jmán 188f.
tanú/tanvi (loc.) 81¹⁰⁰
tāpuṣ- 145f.
tāmiṣrā- 244
tuvigrā- 72
túviṣmant- 140⁵
tvák : -tvacas- 150
devī 147¹⁷
devī (voc.) 80
dóh/doṣṇ- 27, 53, 196, 198

dyávi (loc.) 79
dru- 63
dhí- 66⁵³
nābhi, nábhya- 190
nyāk, nīcā 90
pataṁgā- 13
patarā- 14
parút 79⁸⁸, 83¹⁰⁷
parókṣam 88
parṇā- 13
pārvan- 51¹⁰, 91
pāsas- 213³⁵
pārsvā- 112¹², 116
pīvan-/pīvarī- 241, 147¹⁷
pīvasā- 116
purvedyúh 79⁸⁸
pūr 66⁵³
pratyák, pratīc- 204
pratyákṣam 88
brāhmā- 279
-bharman- fem. 240
bhí- 66⁵³
bhrū- 66⁵³
-m(a)n-ā, -e, -as 159ff.
mánas- : -mánāh 91
: -manas- fem. 240
mastiṣka- 12
mitājñu- 91, 272
yakn- 161
yúh, yūṣṇ- 27, 54, 161, 199
ratharyā- 243
rathirā- 222, 243
rājāni 203¹⁷

vájrabāhu- 276
 vatsá- 116 f.
 vadhū (*voc.*) 80
 vanar- 236, 291
 varṣām : varṣā : varṣā(ṇi)
 125 ff.
 viśvatúr- 80
 śarabhá- 6
 *śarva- 6, 7, 9
 śíras- 1, 19, 20, 21, 22, 26 ff.,
 28, 105, 139 ff., 158
 śíras-, śírṣṇ- 195-218
 śírṣakti- 199
 śírṣṇ- 20, 22, 28, 48, 77, 98,
 159 ff.
 śúṣka- 271
 śṇṇga- 2, 9, 11
 śṇṇāti, aśarīt 66
 *śrāya- 95, 103, 107 ff., 135,
 209, 285 f.
 śrī- 66⁵³
 *śrū- 2, 6
 *śrauva- 6, 9
 śvāsura-, śvaśrū- 133
 sādmanī 132
 sadhástutī (*inst.*) 80
 sanāt 83¹⁰⁷
 -sani (*infin.*) 198⁵
 sárpiṣ- 145
 sānu 15, 19
 sūnū-, sūnáu 81
 snāvan- 21³, 32¹⁵, 160, 161⁵
 syúman- 52¹⁰, 120, 127
 svār 120, 127
 héman 52¹¹, 189

Avestan

aesmō. zasta- 276
 aiiarə, aiiārē 119, 127, 129
 aipi. aṣra- 89
 anu. zafan- 87
 ast- 77, 202
 astəntāt- 202¹⁴
 asta- 33
 ašāuuan-, -uuir- 241
 aši 150, 204
 (xšuuas). ašīm 204

āiiu, yaoš : yaož- (dā-) 143 f.
 āxšnu- 87, 88, 269, 272 f.
 āəāṇha, āṇhō 201
 uši 131, 132, 150, 204¹⁸, 207
 karšā- 33
 karšuuarə 33
 gauua- 59
 gairē, garō(bīš) 66⁵³
 gərəbuš- 150
 xā 66⁵³
 xrūm 66⁵³, 150 f., 287
 čašman- 278
 jāfra- : jāiḃi- 189
 təuuiš 26, 140
 dām 79
 duuarə 79
 patarəta- 7
 parəna- 13
 -baēuuan- *fem.* 240
 -fədrī- 241
 frašnu- 91, 272
 nāman 129
 nāghan- 11
 manō, manā 118, 120, 129
 mast(ə)rəyan- 11, 12
 vīsaiti 132
 vīzafāna- 89
 rāzar/n- 203¹⁷
 sarah- 19, 139 ff., 158
 sāra- 110 f., 116 f., 134
 staman- 52¹⁰
 stairiš 26, 140
 snāuuarə 21³, 32¹⁵, 203
 snāuuia- 32¹⁵, 203
 sraiiia 66⁵³
 srū-/sruuā- 1, 3 f., 9, 16 f.,
 100¹³⁶
 sruuara- 4⁵
 sruuō. zana- 4⁵
 za/əmarə 188⁶⁵
 za/əmar(ə)- 236
 zauruuan- 275
 ziiā/zim- 52¹¹
 zuš 66⁵³
 žnubiias- 15, 91
 hizū-/hizuuā- 16
 huuarə 120, 127
 huška- 271

Old Persian

afuvā- 276
 fraṭara- 95 f., 103, 107 ff.,
 111, 116, 136 f.
 hamapitā 91

Latin

-ā (< -eh₂ #) 285
 abdomen 51¹⁰
 accipiter 13
 ador 124³⁴
 aes 115
 ancipes 89
 anculus 114
 armus 114
 arua 203, 292
 auris 207, 210 ff.
 auscultare 207
 caput 214
 cerebrum 19, 20, 21, 221,
 235²¹, 242 f., 249
 cernuus 111 ff., 116 f., 134
 cerritus 194⁸²
 ceruix 4 f.
 ceruos 7, 14, 100¹³⁶, 155
 cinis 145
 columba/-us 71⁵
 columen/columna 14
 cornum/cornu 4, 9, 11, 13
 corpus 141, 150, 286 f.
 coxendix 5
 crabro 19, 20, 249 f., 258
 crapula 60
 cruor 119, 120, 127
 culmus 114
 cuticula 5
 diu 79
 -ere *infin.* 198⁵
 exlex 87
 exsensus 89
 flamen 51¹⁰
 genu 15
 hiems 52¹¹
 homo/hemo 187 ff.
 inguen 51¹⁰
 iter 279
 ius 144¹⁰

landica 5
 lien 51¹⁰
 locus : loca 280
 luna 14
 macer 250
 nasum 214
 os 214
 ossua 21³
 -ox 150, 204
 paenula 60
 palma 114
 palumbes/-is/-us/-a 7¹⁵
 patruos 112¹²
 pecten 51¹⁰
 pecus 275

penis 213³⁵
 penna 13, 14
 pesna 14
 pollen 51¹⁰
 praeceps 90
 praeosterus 89
 prandium 114
 privignus 72
 prurio : pruna 14
 puluis 51¹⁰
 rex 203¹⁷
 sanguen 51¹⁰
 semen 119, 120, 123
 semianimis 233

serum 34
 sinciput 114
 sol 120, 127
 subiugius 87
 tenebrae 244
 ue(n)sica 5
 uetus 145 f.
 uictrix 5
 uiginti 132
 uis 66⁵³
 ulna 114
 umbilicus 5, 190
 umbo 190 f.
 unguen 52¹⁰

Celtic

Gaulish

κάρνον (*Galat.*) 5, 13
 κάρνουξ 2³, 13

Old Irish

arae 207, 214
 arbor 33, 122³², 203
 asnae 77, 202
 áu 207, 210 ff.
 ben, mná, mnaí 17, 108, 131,
 282
 (da) brú 66⁵³
 bruinne 6
 (do-)cer 113¹⁵
 cern 113

críde 6, 95
 cróa/crua 6
 crú 66⁵³, 150 f.
 delb 15
 én 13
 fén 14
 imb 52¹⁰
 imbliu 190
 inchinn 72⁷²
 ís 79
 meld/mell 257
 rí 203¹⁷

Welsh

carn 5, 10²⁶, 13
 carw 7, 10²⁶, 14, 100¹³⁶, 155

cern 113
 corn 5 f.
 darn 10²⁶
 edn 13
 eis 51, 202

Cornish

carn 5, 10²⁶, 13
 carow 7, 10²⁶, 14
 darn 10²⁶

Breton

darn 10²⁶
 karn 5
 korn 5 f.
 qaro 7, 10²⁶, 14
 quernn 113

Germanic

Gothic

andanahiti 87
 agis 198⁵
 augō 128⁴⁹, 201
 ausō 128⁴⁹, 207
 guma 187 ff., 237
 haírtō 11
 haubīþ 214
 haúrn 6

hluma 128⁴⁹
 namō 128, 161⁵, 186
 sitls 251

Old Icelandic

elptr/qlpt 251
 (i) fjord 83
 haufud 214
 hjarn 192

hjarni 192 f., 217
 hjarsi 20, 185 ff., 192 f., 217
 hjqrtr 7, 9
 hqfuð 214
 hrútr 17
 hvel 34
 kalsi 198⁵
 mildr 257
 setr 251

vagn 14
vātr 203¹⁶

Old High German

albiz/elbiz 251
ancho 52¹⁰
chrebiz 251
dinstar 244
egiso : egislīh 198⁵
farn 13
hirni 48, 192, 219
hiruz 1, 9, 14, 17, 251
horlitz (MHG) 251, 258
horn 6
hornaz 251
hornbero 252
horniz (MHG) 251

hornuz 251 f.
houbit 214
hrind 7, 9, 11, 258
naba 190
namo 128⁴⁹, 161⁵, 186
sāmo 128⁴⁹
wafsa 251

Old Saxon

ámboń 191
hrīth 7

Old English

ælbitu 251
fearn 13
hafela 214

hafud 214
hēafod 214
hlȳsa 198⁵
hrif 286 f.
hrȳder 7, 258
hyrnett/hyrnetu etc. 251 f.
milde 257
sēar 271
setl 251
trīg 15
wægn 14
wæt 203¹⁶

Dutch

hersen etc. 193
horzel 250 f., 253, 258

Baltic and Slavic

Lithuanian

akì 204
aši 283
ausū 207
aušrà 236, 244
-e dual 282 ff.
-i duals 283 ff.
kàrvė 8, 14
martì 283, 284
nasrāi 222, 243
pėdà 278
saūsas 271
spařnas 13
stirna 8¹⁶
stomuō 128⁴⁹
sūnu 283, 284
sūskis 271
širša 252 f.
širšalas 252, 254, 259
širšas 252 f.
širšė 252 f.
širšilas 252, 254
širšinas 252 f.
širšlȳs 252 ff., 258
širšolas 252, 254
širšonas 252, 254

širšulas 252, 254
širšunas 252, 254
širšuō 252 f., 254 ff.
širšuolas 252, 254
širšuolis 252
širšuonas 252, 254
širšȳs 252 f.
-u duals 283 ff.
ūdra 8
vařnas : vārna 8
vētušas 145 f.
výru 284
žmuō 181 ff., 237
žmūne 282, 285

Latvian

sirna 8, 11, 13
sirsenis 252 f., 256
siřs(e)nis 252 f.
sirsilis 252, 258
siřsins 252
sirsis 252 f.
sirsūnis 252
siřsuonis 252, 256
stīrna 8¹⁶
ūdr(i)s 8

Old Prussian

curwis 8
kelan 34
kērmens 15
nabis 190
sirsilis 252, 258
sirwis 8, 100³⁶, 155

Czech

sršeň 252

Old Polish

sierszeń 252

OCS

čřevo 15, 150
golqbī 7¹⁵
krŭvī 150 f.
mladŭ : mladen-(īcī) 257
oko, očese, oči 16, 131, 150,
197, 204
pero 33

sěmę 119, 120, 123, 128
syny 283, 284
uxo (ucho), ušese, uši 207,
210 ff.
vetūxū 145 f.
vranū 8

RCS

krava 8, 14
lebedī 251
s(t)rūšenī 252

-y *dual* 283, 284
žena, ženo 80, 285

Bulgarian

štūršel/štūršel 252, 258 f.

Old Russian

sīrna 8, 13
sīršenī 252, 259

Serbo-Croatian

krāva 8, 14
sīrna 8, 10
sīrljēn 252, 259

Serbian

vrāna 8

Hittite

ašāyur 31 ff.
-eššar, -ešn- 198^s
ēšhar 123, 198^s
ḫappinant- 145
ḫaršār 21⁴, 198
ḫaršayur 31 ff.
DUGḫarši- 22⁴
ḫaršumna- 22⁴
ḫaštai 123³⁴, 134
ḫašduēr 119, 120
ḫenkan- 51¹⁰
karāyur 13, 19, 20, 21, 22,

31 ff., 46 f., 104, 107 ff.,
122, 134 f.
gimra- 222, 243
kišri 82
kitkar 19, 20, 22, 31, 78,
96 ff., 103 f., 107 ff.,
122, 134
lāman 161^s
lammar 98
maklant- 251
naḫḫan- 51¹⁰
partāyur 13, 31 ff., 47

pattar 13
šahḫan- 51¹⁰
šakkar 119, 123
šuēl 119
takšan- 51¹⁰
tekan- 187
utne 119, 120
yātār, yidār 119, 123, 127,
129
yiti, yitaz 203¹⁶
yitti 83

Tocharian

A māššunt 12

A ysār/B yasar 123, 128

A šaru/B šerwe 8

UNTERSUCHUNGEN ZUR INDOGERMANISCHEN
SPRACH- UND KULTURWISSENSCHAFT

STUDIES IN INDO-EUROPEAN
LANGUAGE AND CULTURE

Herausgegeben von Roberto Gusmani, Anna Morpurgo-Davies,
Klaus Strunk und Calvest Watkins

ANNEMARIE ETTER

Die Fragesätze im R̥gveda

Groß-Oktav. XIV, 287 Seiten. 1985. Ganzleinen DM 128,- (Band 1)

Aus dem Inhalt: Einleitung (Fragesätze und ihre Form innerhalb eines Sprachsystems, Fragen im R̥gveda); Direkte Fragesätze (Die Bildung von direkten Fragen, die Fragewörter, Wortfragen, Satzfragen, Ellipsen, Mehrfachfragen und Wiederholungen, Vokative, Tempora und Modi, Aspekte und Aktionsarten); Indirekte Fragesätze (Wortfragen, Satzfragen, Pronomina, Adverbien und Konjunktionen, Tempora und Modi, das Verhältnis von Haupt- und Neben-Werksatz), Fragen mit *kuvid*, Anhang, Indices, English Summary.

in Vorbereitung

Studies in Memory of Warren Cowgill (1929–1985)

Papers from the Fourth East Coast Indo-European Conference,
Cornell University, June 6–9, 1985

Mit Beiträgen von Cardona, Dunkel, Hale, Hoenigswald, Insler, Jamison, Jasanoff, Joseph, Kimball, Melchert, Morpurgo-Davies, Nussbaum, Ringe, Schindler, Watkins

HEINRICH HETTRICH

Untersuchungen zur Hypotaxe im Vedischen

(mit Ausblick auf die Vorgeschichte der Relativsätze)

Groß-Oktav. Ca. 800 Seiten. 1986. Ganzleinen ca. DM 350,- (Band 4)

Es handelt sich um eine in 5 Teile gegliederte Abhandlung zur Syntax sämtlicher Nebensätze im Vedischen, insbesondere im R̥gveda. Diese im Prinzip synchronische Beschreibung der vedischen Satzsyntax sucht, soweit das möglich ist, semasiologisch postulierte Nebensatztypen mit ihnen zugeordneten formalen Merkmalen zu korrelieren.

Preisänderungen vorbehalten

Walter de Gruyter



Berlin · New York